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USSR REPORT

TRANSPORTATION

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19 December 1985

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CIVIL AVIATION

AEROFLOT, BALKAN AIRLINE COOPERATION, COORDINATION

Moscow IZVESTIYA in Russian 6 Aug 85 p 5

[Article by V. Zakharko, IZVESTIYA's own correspondent, Sofia: "The Passenger Chooses an Airplane, How Aeroflot and Balkan Built a Common Aerial Bridge"]

[Text] The earthly paths of these two passengers, who were total strangers, came together for a few minutes at the center of Sofia, at No 2 Russkiy Boulevard, where the general representative for Aeroflot in the People's Republic of Bulgaria is located, with its automatic flight reservation service.

"I'm vacationing in Bulgaria at the invitation of my friend Nedelcho Georgiyeva from Kyustendil'skiy Okrug. A few years ago, Nedelcho and I worked on the same excavator in a Soviet-Bulgarian collective that was building a gas pipeline to Orenburg Oblast," says Radiy Aytkulov, operator for the Orenburggazstroy Trust. "I flew here on a Balkan plane, and now I want to reserve a seat on a return flight. The Aeroflot flight is more convenient in terms of time."

"I have to be at one of the plants in Leningrad that our Sofia enterprise works with," says engineer Yordan Khristov. "Here in the Aeroflot office I just got a seat on a Soviet plane for the return flight from Moscow. I'm convinced that buying tickets for trips to the USSR and back has become much simpler and faster now."

Of course, Aeroflot and Balkan have worked closely together before, but each company was separate then, each accounted for its own income and expenses and each tried to transport all the passengers from its own country. However, that turned out to be far from always the best thing for the passenger. For someone from Kiev, for example, the morning Balkan flight to Varna would have been more convenient, but the way things had developed he had to fly on an Aeroflot plane that only took off toward evening. An inhabitant of Sofia, Plovdiv or Burgas waited for a Balkan plane to leave for Kiev or Leningrad, while at the same time, on the other side of the glass partition, he could have been getting ready to fly on the Aeroflot Tu, which had many free seats on it...

And the flight captain would have been happy to take on board all those who wanted to go, but Balkan would not let them out of their hands; they had their

own plan. And Aeroflot had the same strong position.

"A bureaucratic approach to the matter has been shown in the work of both companies," admitted I. Geroyev, Aeroflot's general representative in Bulgaria. "This was especially noticeable during the winter, when the transportation volume falls considerably. Sometimes less than one third of the plane was filled going one way, but each of the companies completed its flights without fail. And air transport everywhere -- especially since it's through the air -- is an expensive business. After analyzing the plusses and minuses of working separately, they decided to try a new approach: a combined operation.

"Let's take for example the Sofia-Moscow route, which is 2,000 kilometers," explains the Sofia representative for Aeroflot G. Tavlintsev. "If this route is served by an Il-86 with a seat capacity of 316, that means, as we say, 632,000 passenger-kilometers for one flight. On a Tu-134 there are about 76 seats. Here we accumulate a total of 152,000 passenger-kilometers. Don't be afraid, but I'm going to use another of our specific concepts: 'leveling capacity.' Aeroflot has allotted 300 million passenger-kilometers for the Moscow-Sofia line in this year's program, while Balkan has 295 million. A complete leveling will be worked out at the expense of other routes."

The transition to a combined operation began five years ago and last year a total of more than 40 flights between the Soviet Union and the People's Republic of Bulgaria were fully completed, including seasonal flights to the Black Sea coast of Bulgaria. At the basis of this common work lay a principle: for equal volumes of passenger-kilometers, each of the companies pays its own expenses but the income is divided in half. The airplanes of both countries were open to all passengers with equal hospitality. When the number of aircraft has to be increased, the sides do not negotiate who is to do it. When the passenger flow decreases, it is quickly worked out which flights will be cancelled with the least inconvenience to the passengers and whose planes will make the flights.

R. Aytkulov from Orenburg, the Bulgarian Y. Khristov and many other citizens of the two countries whom I talked with in the Aeroflot office, and later at the Balkan ticket counter, welcome the changes in the aerial bridge between the People's Republic of Bulgaria and the USSR. Representatives of the companies themselves note that the financial results of the joint activity have been very good. To transport 40,000 passengers during the first half of 1983, Aeroflot made 550 flights. During the first six months of this year, 40,000 people were also transported, but 130 fewer flights were needed for this. The number of seats occupied on the Moscow-Sofia line increased by 15 percent. Balkan's data are close to the same figures.

"Our new collaboration mechanism is more and more surely picking up speed," said Kosta Gargov, Balkan's commercial director, "although not all the problems have been solved yet. Thus, substantial complications have arisen because we have different automation systems. And insofar as the two systems are not compatible in terms of all the indicators, there are shortcomings. There are also other problems in linking Balkan with Aeroflot, but this is just a question of time. The important thing is that a simple and efficient principle

for joint work has been determined: each one pays its own expenses and the income is divided in half.

"Now," Gargov continued, "we must begin transporting freight together more actively; here a lot depends on the foreign trade organizations. Usually for the delivery of fresh vegetables, fruits and grapes from Bulgaria to the Soviet Union they assign special charter flights, and this means that the plane delivering 20-30 tons of freight one way comes back empty. Meanwhile, in every passenger liner you could put 2-3 and sometimes even 5-8 tons of additional freight. In the summer more than 50 planes fly between our countries every week. And if it didn't inconvenience the passengers, Bulgarplod could send and Soyuzplodoimport could receive Bulgarian food produce on passenger flights, and aviation officials could cut transport costs. The advantage for all participants would be considerable."

"The accumulated experience of Balkan and Aeroflot convinces us that a more profound socialist economic integration will enable us to move forward much more rapidly in solving our transport problems," division chief for liaison with socialist countries Veselin Penchev told us in conversation. "There is already an agreement for joint work between Balkan and ČSA [Czechoslovakian Airlines], which will begin November 1st of the current year. Our work with other airline companies from CEMA member countries is developing in the same direction as well. Probably other types of transportation collectives in socialist countries -- motor, railroad and water transport -- could derive something useful and promising from such work.

The Balkan Airlines building is located in the Sofia airport. Right now one can hear the roar of a regularly scheduled plane taking off. An Aeroflot airliner (316 seats) has just left for Moscow. I found out that almost half of its passengers are citizens of Bulgaria and third countries. Between the two airline companies an agreement for the accounting and conversion of foreign currency has also been reached; here the income is divided in half as well. In brief, it is profitable to transport everyone who wants to fly.

12962

CSO: 1829/1

CIVIL AVIATION

SUKHOY DESIGN BUREAU BUILDS SPORT PLANE MADE OF PLASTIC

Moscow IZVESTIYA in Russian 16 Aug 85 p 3

[Article by IZVESTIYA'S special correspondent V. Belikov, under the rubric "For the First Time": "Su-26 -- The Flying Star"]

[Text] We present an innovation in sports aviation -- the Su-26 airplane, which will be shown for the first time at the Tushin air fair next Sunday.

Flying machines made out of plastic are familiar to everyone, but only children occupy themselves with them for long. Plastic models are a favorite children's toy. A little over a year ago in one of our best known design collectives, Experimental Design Bureau imeni P. Sukhoi, the first pilot-operated sports plane in the world to be manufactured out of plastic was given birth.

The Su-26 was planned by a brigade of young designers and engineers, recent graduates of aviation institutes, for whom this was a substantial and serious work, carried out in fulfillment of a proposal by the USSR combined team.

"Why did you decide to build the plane out of plastic instead of the traditional, well-tested materials used for light aviation -- steel, plywood and canvas?" I asked the creator of Su-26. It turns out there were reasons for it, the main one among which was an attempt to make the plane as light as possible but still durable and maneuverable.

As we know, weight and a tough construction are the eternal opponents in airplane construction; a gain in one characteristic inevitably leads to a loss in the other. Carbon-plastic longerons for the wings, rudder and ailerons, "layered" facing panels made of fiberglass and foam plastic, gas tanks also made of foam plastic -- laminated inside with fiberglass fabric and covered with a synthetic sealer on the outside... The list of innovations created by modern chemistry and utilized boldly by young designers to decrease the weight and increase the service period of the plane may be completed by mentioning that on the Su-26 panelling there is not one rivet or welding seam. Its structural units are held together by high-strength glue.

"But the motor is metal, isn't it?" I asked, interested.

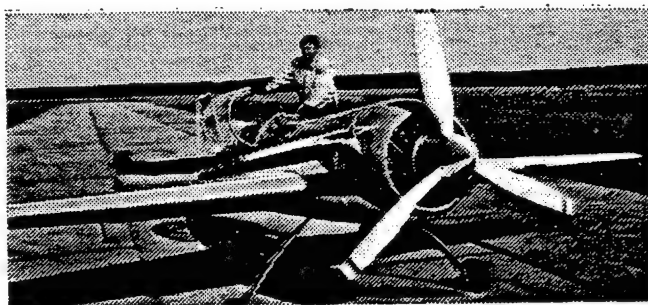
"Of course, a domestic 360-horsepower M-14R which enables us to reach a speed of more than 300 kilometers an hour. The chassis post-springs are made out of a titanium alloy, while the light body of the fuselage is made out of stainless steel tubes. The combination of such a "skeleton" with a plastic facing ensured the necessary reliability of design. For the sake of winning aerobatics competitions the pilot has to become merciless with himself and the plane for a few moments. He executes the air maneuvers in such a way that his blood becomes as heavy as lead and his vision becomes clouded with red."

By the way, openings on the bottom and sides of the metal fuselage framework close to the pilot's seat are used as "windows" for additional visibility from the cockpit. The whole aerial arena he is performing in stretches out before the sports flier, with its white boundary strips on the ground. He can't go outside these borders or he will lose points.

"An excellent view from the cockpit," USSR team captain Viktor Smolin explained to me, "is not simply one of the advantages, but an indispensable condition for carrying out acrobatic flights in the Su-26. This vehicle is fast and maneuverable, made in the best traditions, you could say, of the 'firm' that created it."

...In the evening sky over the air field the small blue and white plane was doing its stunts. The elegant and at the same time contrasting color enabled us to follow its cascade of figures easily. It circled, stringing loops one after another, rolling across its wing, turning somersaults in the air, only to shoot back up in an elastic arch. This was flight bordering on art, an aerial ballet in which the sportsman's skill was mingled with the seemingly unlimited possibilities of the winged machine.

When the "acrobat" airplane landed and came to a stop, I made out on the cowl of its blazing engine a flying star alongside the Su-26 trademark.



The New Su-26 Airplane

Photo by Author

12962

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CIVIL AVIATION

FEATURES OF PLANNED IL-96-300, IL-114 AIRCRAFT

Design Bureau Chief Comments

Moscow PRAVDA in Russian 27 Oct 85 p 6

[Interview with Academician Genrikh Vasilyevich Novozhilov, general designer and chief of the Experimental Design Bureau imeni S. Ilyushin: "An addition to the Family of "Il's" [Ilyushin aircraft]]

[Text] "In accordance with the tradition established in our collective, the general designer directly guides any new aircraft up to the conclusion of state testing, but this does not mean that he stops watching the aircraft closely during operations as well. Such an aircraft is now in the Experimental Design Bureau imeni S. Ilyushin--the Il-96-300 long-range mainline passenger aircraft. It is designed to carry 300 passengers, baggage, mail and freight on long-distance routes--up to 9,000 kilometers--with heavier passenger flows. Provision is being made for use of the aircraft on international routes, including those up to 11,000 kilometers in length..."

This information began our discussion with Academician G. Novozhilov, chief of the well-known design collective, Twice Hero of Socialist Labor, and deputy of the USSR Supreme Soviet. The new aircraft in the "Il" family has to be completed in a brief period of time and transferred to the customer for it--the Ministry of Civil Aviation--in the 12th Five-Year Plan.

Outwardly, the airliner will be similar to the celebrated Il-86 widebody. But only outwardly. The "96" is a completely different aircraft. Everything in it--from its aerodynamics, the on-board electronic systems, the materials used, the airframe design and equipment to the navigation and radio communications systems--is qualitatively new, which will make it possible to significantly improve the technical and economic characteristics of the aircraft and to make the crew's work easier on a long flight. After extensive research and testing operations, the designers, in close contact with the TsAGI [Central Aerohydrodynamics Institute imeni N. Ye. Zhukovskiy] developed a long sweptback wing with higher aerodynamic parameters.

Let us also direct attention to this aspect. Specialists of the OKB [Experimental Design Bureau], in collaboration with the sector's scientific research organizations, have optimized, as they say here, the aircraft's power



arrangement. This has made it possible to utilize new metals and alloys and to expand the application of so-called composition and synthetic materials, and in the final analysis to reduce the weight of the aircraft's airframe.

Further innovations also could be enumerated. I will emphasize only that all this has been done because of the airliner's high degree of economy.

And the OKB's designers have begun developing one more aircraft. This is the Il-114 passenger aircraft for local air routes. This aircraft is intended to carry 60 passengers on routes up to 1,000 kilometers long. In a word, it has been called upon to operate on those routes where the An-24 has been operating successfully for many years now...



This is how the Il-96-300 widebody will look.

Our discussion with the OKB chief was interrupted several times by telephone calls. There were various types of questions. And as I understood, they basically concerned the "96." I will not vouch for the accuracy of the account, but they seemed to be as follows: structures specialists asked that the manufacture of some type of test benches be speeded up, someone did not have "machine" time for automated project planning, the third callers were disturbed because of the "engine connections [obvyazki]--little understood by an outside observer--which should have been received as quickly as possible, and the secretary of the enterprise's Komsomol organization extended an invitation to take part in a forthcoming conference... Unseen callers asked questions and were advised. All this made it possible for the specialists present in the office to observe that this, they say, is the customary "morning activity of the general designer."

A group of students working on graduation theses from the Moscow Aviation Institute, including Genrikh Novozhilov, came to the S. Ilyushin Design Bureau at the beginning of 1948. At that time, about 300 persons were working in the design bureau.

"There is one motto in our collective--work, work, and work again," Sergey Vladimirovich [Ilyushin] told the recruits. "But productive work, not work in the 'basket.' Without conceit, when everything works out well. Make use of whatever has been done before you that is of high quality and has proved itself in operation..."

It has now been 15 years that G. Novozhilov has been the general designer of the famous aircraft manufacturing "firm" (Novozhilov does not like this word, incidentally). The Il-76 transport and the Il-86 passenger aircraft were developed under his leadership. For this reason, the following question, PRAVDA readers often ask him as well, has applied to a delicate topic such as the letters on the sloping sides of the airliners.

"Indeed, I am frequently asked why the new aircraft retain the 'Il' name," Genrikh Vasilyevich says. "I will answer. Our teachers had a name of world importance. They developed fine, efficient collectives. Why change the name? On the contrary, we believe that the traditions established by our teachers should be developed in every possible way, and that we should strive to ensure the honor of the name. Both the general designer and the entire collective. The 'Il' name imposes responsibility. It is not coincidental that our staff members proudly say: 'We are Ilyushin workers.' As a rule, the enterprise management's annual discussion with young specialists begins this way."

[Question] Readers do not quite visualize the essentials of the general designer's responsibilities. Either he develops airplanes, or he trains the collective, or he takes part in all sorts of conferences...

"The position of general designer made its appearance at one time not at all by accident," Academician G. Novozhilov answers. "One person alone could not direct the entire family, as we say, of aircraft, since the subject matter of all the experimental design bureaus has become so complex. A staff of chief designers for the appropriate fields was established. Well, the general designer was given the authority to resolve problems and matters in dispute. Sometimes he has to 'mediate' for the chief designers. These circumstances should be noted: hundreds of collectives of various ministries and departments take part in developing an aircraft. In addition to Aeroflot, our basic customer, the airlines of fraternal countries operate our aircraft. As a rule, many problems of intersectorial relationships, I would say, end up with the general designer."

[Question] All the same, apparently, the person charged with heading the "firm" which has made the aircraft known the world over has more than simple feelings?

[Answer] I agree. Our teachers were eminent engineers and managers. But having absorbed the best of everything they had, we are not copying them. After all, years have gone by. Science and technology have moved forward. And we are applying a great deal in our work today that our teachers only dreamed of. But although the methods of resolving complex problems have become quite different, the traditions are being preserved. As before, we attach a great deal of importance to the education of designers and production engineers and to training a person to think like a designer.

[Question] But since there are a great number of problems, can't time be left for an engineer to generate fresh ideas, assuming that he is most talented?

[Answer] We are trying to do everything to help the designer. Computer technology plays an immense role here. By freeing the engineer from manual labor, the EVM [electronic computer] enables him to "spend" more time in the search for the best alternatives. And despite the fact that working designs are being drawn on so-called graph plotters, without a pencil and a ruler, the designer is proud that problems have been resolved after his work is completed. Some of our specialists even say that working with a computer has become still more fascinating.

[Question] A final question. About 8 million passengers already have been carried by the Il-86, which has a large seating capacity. Air travelers like the aircraft. Are the lines of the Il-96 now on the drawing boards of your experimental design bureau?

"The Il-86 has served as the reference model for developing subsequent aircraft with large capacity," the general designer responds. "This is just one of the examples of the design bureau's continuity of traditions. Any new idea or design requires careful weighing of all the 'pros' and 'cons' and the ability to make the correct choice. Academician S. Ilyushin taught us this as well. Any aircraft must meet those requirements for which it is built to the maximum possible extent. In that case, the aircraft is assured of a long life in the sky..."

The time for the discussion had run out. Specialists of the motor building collective, one of the basic groups of related workers involved with the new "Il," were entering the general designer's office already.

#### Additional Characteristics

Moscow IZVESTIYA in Russian 29 Oct 85 p 3

[Article by V. Belikov: "An Open Sky for You!"]

[Text] New passenger aircraft which are to begin flying in the near future are being developed at the Experimental Design Bureau imeni S. Ilyushin under the leadership of General Designer and Academician G. Novozhilov.

Two years ago, in the autumn of 1983, we acquainted readers of IZVESTIYA (Nos 291/292) with the first and still preliminary analyses of the new aircraft which were carried out by the large collective of one of our most celebrated organizations for developing heavy transport aircraft. At that time, Genrikh Vasilyevich Novozhilov, standing in a room with test benches, curtained off by schematics, drawings and diagrams, described the features of the future "products" which did not even have officially approved firm names yet.

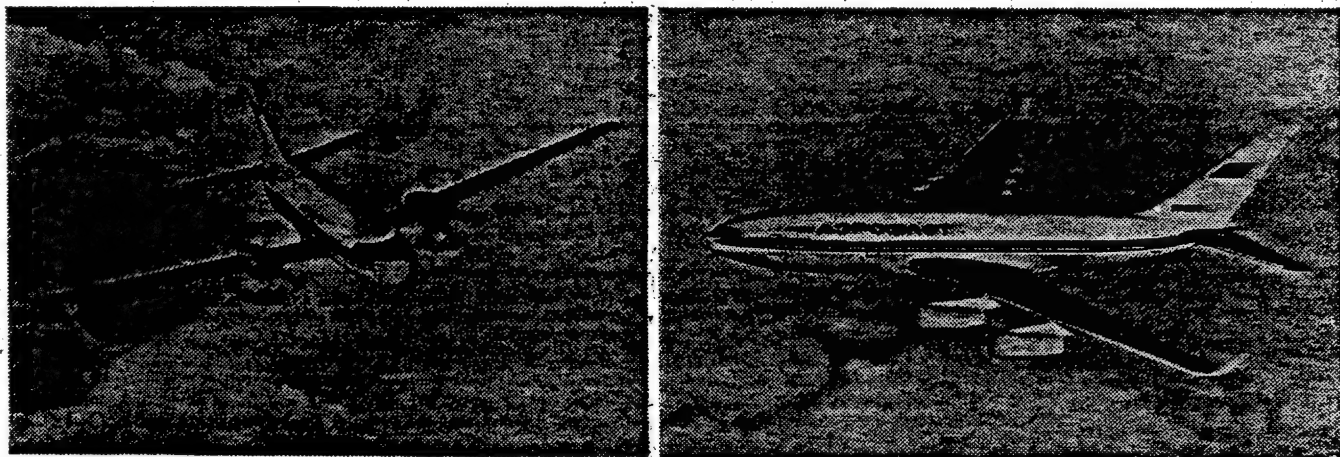
It now is known that one of the airliners will be called the Il-96-300--the younger brother of the widebody Il-86, which has served the most heavily traveled routes and is very familiar to and well liked by passengers. The figure "300" in the new aircraft's designation signifies the number of

passengers to be carried on long-range air routes of 9,000-11,000 kilometers. In other words, a more modern, very comfortable and economical aircraft will be replacing the Il-62, which has served well, on long-distance routes.

The fact that the Il-96-300 will have a crew of just three to fly the aircraft "under instrument weather conditions over any regions of the earth," as its creators note, attests to its high degree of reliability and the high level of automation of all its flying processes. The new Il [Ilyushin] will be able to make an automatic landing approach under practically minimum-visibility conditions.

True, this long-range airbus has not been provided with its own built-in ramps--it will have to make fewer landings and takeoffs than the Il-86, which is being operated on medium-range routes. But then, the lower deck of the Il-96 has been equipped with machinery for rapid cargo handling in containers, which it will be able to deliver at the same time to the destination airport, significantly increasing the profitability of its flights.

General Designer G. Novozhilov stated that the long-range mainline Il-96-300 aircraft will join Aeroflot by the forthcoming five-year plan.



The Il-114 airliner for local routes (left) and the Il-96-300 long-range mainline passenger aircraft (right).

The reliable workhorse of the postwar years, the Il-14, is remembered to this day by civil aviation veterans with a kind word. The Il-114 passenger aircraft for local air routes, which will become its unique successor, should come to replace the An-24 turboprop which is now in operation. The new aircraft will serve short-haul air routes--up to 1,000 kilometers, but with a large number of passengers.

Its relatively light weight will enable it to utilize unpaved airfields. Sixty passengers will be able to board the aircraft's spacious passenger cabin

on the built-in ramp. Another feature of this airliner is its two turboprop engines with a large number of blades. Such powerplants will provide the aircraft with a cruising speed of 500 kilometers per hour with relatively little noise in the process.

The extensive use of modern materials and low fuel consumption will provide the Il-114 with a high degree of economy.

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## CIVIL AVIATION

### BRIEFS

**RYAZAN AIRPORT RECONSTRUCTION--Ryazan--**The Ryazan Aviation Enterprise's fleet of aircraft will be replenished this year with new L-410 passenger aircraft. This requires some reconstruction of the airport, including the runway and taxiways. In preparing to receive the new aircraft, Ryazan aviators have decided to improve the work conditions of the different services. A building has been erected for the fuel and lubricants facility and the battery room, a garage is being built for special transport, and finishing work is under way in the dock hangar, where storerooms and the aircraft engine repair section are located. The combination of these measures will have a beneficial effect on the enterprise's entire collective and will enable it to improve interblast transport and the quality of equipment maintenance. [By A. Lavrentyev] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 20 Apr 85 p 1] 8936

**SAO TOME-USSR AIR AGREEMENT--Sao Tome, 25 Apr (TASS)--**An agreement establishing scheduled air service between the Soviet Union and the Democratic Republic of Sao Tome and Principe (DRSTP) has been signed here. V. D. Samorukov, collegium member of the USSR Ministry of Civil Aviation, signed for the Soviet side and (Felixberto Neto), DRSTP director of civil aviation, signed for Sao Tome. During their stay in Sao Tome, the Soviet delegation was received by Oscar (de Sacramento y Souza), member of the Politburo of the MLSTP [expansion unknown] Central Committee and DRSTP minister of transport and communications. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 27 Apr 85 p 3] 8936

**AEROFLOT-LUFTHANSA DISCUSSIONS--**Minister of Civil Aviation B. P. Bugayev received (G. Runau), chairman of the board of Lufthansa, the West German airline, on 16 May. Views were exchanged on basic questions of collaboration between the USSR and the FRG in the field of air service. Both sides expressed the desire to develop bilateral aviation ties on a constructive, mutually beneficial basis. The FRG ambassador to the USSR, (J. Kastl), took part in the discussion. The FRG guest also met with V. Lebedev, deputy chairman of the USSR Goskominturist [State Committee for Foreign Tourism]. (G. Runau) laid a wreath at the Tomb of the Unknown Soldier at the Kremlin wall. [Our own report] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 18 May 85 p 2] 8936



**NEW DZHEZKAZGAN AIRPORT OPENS**--On the eve of the 40th anniversary of the Soviet people's victory in the Great Patriotic War, a new air terminal complex with a runway capable of accommodating Tu-154 aircraft went into operation in Dzhezkazgan. A meeting of working people from the city and the oblast was held at the airport. P. Galimas, brigade leader of the plasterers and painters, and L. Rakutin, chief engineer of the general contractor--the house-building combine, spoke at the meeting. A symbolic key to the new air terminal is handed over to the proprietors amid stormy applause. N. Davydov, first secretary of the Dzhezkazgan Obkom of the Communist Party of Kazakhstan, congratulated the builders, the aviators, and representatives of workers in the oblast on the commissioning of the excellent air terminal. Meeting participants viewed the terminal's service facilities, which will be able to accommodate more than 200 air travelers per hour. The air terminal was built with funds from the Kazakh SSR Council Of Ministers. [By correspondent S. Shatan] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 14 May 85 p 1] 8936

**KIEV-SALZBURG SERVICE BEGINS**--Kiev--Scheduled air service has begun between Kiev and Salzburg, the tourism and resort center of Austria, motherland of the great Mozart. Henceforth, Tu-154 airliners will be flying every week on this route, the 16th foreign route in succession with which crews of the Ukrainian Civil Aviation Administration have become familiar. It is noteworthy that the flight on the new route falls on the days when the 30th anniversary of the signing of the state treaty restoring independent and democratic Austria is celebrated. The scheduled air service between the capital of the Ukraine and Vienna has contributed to the growth in mutual understanding between our peoples, and the new air route attests to the fact that economic and cultural ties are growing stronger. [By correspondent V. Tishchenko] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 21 May 85 p 2] 8936

**IMPROVEMENTS AT KYARDLA AIRPORT**--Tallin-Kyardla-Tallin--The Kyardla airport is situated on the island of Hiiumaa. Everything here has been readied for a feverish period of high-volume traffic: the air terminal facilities have been repaired and the entire territory of the airport has been put in order. With the aim of ensuring flight safety and regularity, specialists of the ERTOS [radio technical equipment and communications] base have prepared the radar and nearby homing facility for operation during the summer season and have set up a new lighting system which ensures that landings can be made even under the most unfavorable weather conditions. A display board has been installed at a prominent place in the waiting room with the new flight schedules. Here a passenger can also obtain information on flights from Tallin to other cities in the country. There also is much activity at the ticket agency, which has significantly increased the sale of tickets to the people. [By R. Aleksandrov] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 16 May 85 p 1] 8936

**USSR-TUNISIA AIR DISCUSSION**--(TASS)--Minister of Civil Aviation B. P. Bugayev received B. Khouaja, minister of transport and communications of the Republic of Tunisia, on 14 May. In the course of the discussion, which was held in a friendly atmosphere, views were exchanged on questions of Soviet-Tunisian collaboration in the field of air service and prospects for its further development. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 16 May 85 p 1] 8936

MAGADAN-KRIVOY ROG AIR SERVICE--Dnepropetrovsk Oblast--An air bridge over 8,000 kilometers long has linked the country's two largest mining regions--the Krivbass [Krivoy Rog Iron Ore Basin] and Kolyma. The first flight was made by a Magadan Aviation Enterprise crew. Magadan is one of 20 cities in our country with which Krivoy Rog aviators have established regular passenger service on a 24-hour basis. In connection with the beginning of construction on the Krivoy Rog Ore Concentration Combine, air bridges also will be linking Krivoy Rog next year with the capitals of CEMA countries which will be taking part in construction of the enterprise. [By S. Chudakov] [Text] [Moscow PRAVDA in Russian 3 Jun 85 p 1] 8936

YEREVAN AIRPORT UPGRADED--Yerevan--New lighting equipment has been installed for the runway at the Zvartnots Airport in Yerevan, which will make it possible to accommodate scheduled flights in instrument weather conditions. Installation workers of section No 7 of the "Aeroportspetsmontazh" administration of civil aviation installed and adjusted the complex system 3 months ahead of schedule. V. Gorelikov, I. Kalin and V. Sergeyev, labor veterans and communications installation workers, particularly distinguished themselves. [By Yu. Grishin] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 6 Jun 85 p 2] 8936

AN-22 TRANSPORTS MI-8 HELICOPTER--The country's aviators have carried out a unique transport operation. A special Mi-8 helicopter was delivered from the capital's Domodedovo Airport to Vladivostok. A powerful "Antey" [Antonov aircraft] with the rotary-wing aircraft on board landed at the airport of the city by the Pacific on 8 June. The helicopter is destined to provide assistance to the crew of the scientific expedition vessel "Mikhail Somov," which is icebound near the coast of the sixth continent. A TASS correspondent asked B. Khimich, chief of the Arctic, Antarctic, and Marine Administration of the Goskomgidromet [State Committee for Hydrometeorology and Environmental Control], to comment on this. "The aircraft delivered to Vladivostok is not ordinary at all," said Boris Pavlovich. "Its navigation system was especially designed for operation at the South Pole, where the effect of Earth's magnetic pole is markedly different from what is customary, as is well known. A minimum of a month would have been required to re-equip the series Mi-8 on the spot. The "antarctic" version of the aircraft would have taken roughly a week to reach there under its own power; this was by no means satisfactory under the conditions that had been created. So we had to seek help from aviators, who coped brilliantly with the task that had been set, it should be noted. In less than 24 hours the powerful aircraft with its crew and specialists was delivered to the country's principal maritime gateway in the east. After brief preparations, the special Mi-8 helicopter will be taken on board the icebreaker "Vladivostok," which will head for Antarctica. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 9 Jun 85 p 3] 8936

IL-62 KRASNOYARSK-SIMFEROPOL SERVICE--Krasnoyarsk--"Now the south has become nearer to us," say Krasnoyarsk residents who fly in an Il-62 aircraft to Simferopol. This year it began nonstop flights to the Black Sea coast for the first time. The spacious waiting room which just opened is one more innovation at the Yemelyanovo Airport. Adjoining it is a baggage pavilion with two newly installed carousels. In case of disruptive situations when



the number of passengers at the airport increases significantly, another 400 seats are added to those that exist. A fast food snack bar has been organized for this purpose. Soon the Yemelyanovo Airport will begin receiving and servicing the Il-86 aircraft. A new pavilion also has been planned for this. But today the words "Krasnoyarsk welcomes its guests!" may be read on its facade. [By M. Nikolayev] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 11 Jun 85 p 1] 8936

YAK-40 SERVICE TO KHOROG--Kurgan-Tyube, Khorog--Each year the radius of flights made by Yak-40 crews in the Kurgan-Tyube Aviation Enterprise, commanded by V. Kot, is extended. Andizhan and Alma-Ata, Fergana and Samarkand, Leninabad and Tashkent, Karm and Kulyab--these are places that aviators of the Vakhsh Valley have flown to until recently. But an important event took place in their lives not long ago: V. Kot, commander of the aviation enterprise, copilot I. Oi and flight engineer T. Bakirov, under the leadership of V. Parfenov, the most experienced ace in the mountainous republic and check pilot of the administration's pilot and navigator department, flew over the most difficult route in the Soviet Union--to Khorog. Previously, in order to get from the Vakhsh Valley, where industry and agriculture are being developed rapidly, to the capital of the Gorno-Badakhshan Autonomous Oblast, it took no less than 24 hours: by bus to Dushanbe and from there by air to the Roof of the World. Now it takes only 53 minutes for this. Flights are being made twice weekly. [By correspondent A. Larenok] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 15 Jun 85 p 1] 8936

AEROFLOT-SWISSAIR TALKS--(TASS)--Minister of Civil Aviation B.P. Bugayev received the president of the Swiss airline Swissair, R. (Staubli), on 17 June. Views were exchanged concerning prospects for further development of mutually beneficial collaboration between the USSR and Switzerland in the field of air service, including between Aeroflot and Swissair. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 18 Jun 85 p 1] 8936

NEW AIRPORT IN SHEVCHENKO--Shevchenko--A new airport has been opened not far from the oblast center of Mangyshlak--Shevchenko. Air travel has become the most widely used form of transportation for residents of the peninsula. This sparsely populated oblast holds third place in Kazakhstan in the number of flights made. The old airport has difficulty accommodating them, and in addition, the houses of the new microrayons in the rapidly growing city have come right up to it. Now a new airport has been built to replace it. With the opening of this airport, new flights have been added to the schedule: additional routes to Moscow and Mineralnyye Vody are being introduced, and direct links have been established with Donetsk, Kaliningrad, Simferopol and Sochi. [By TASS correspondent] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 29 Jun 85 p 1] 8936

IL-86 SERVICE TO LIMA--Lima, 18 [Jul]--A Soviet wide-bodied Il-86 aircraft has landed at the Jorge Chavez International Airport here for the first time. "The Il-86 has been serving international air routes for 4 years now," aircraft commander E. Pustoshilov said. "However, this is a special flight: the aircraft crossed the Equator and landed in South America for the first time. Thus it has made its successful debut on Aeroflot's longest route (14,600 kilometers from Moscow to Lima). The Il-86 also will make a proving

flight to Buenos Aires on 23 July. The aircraft is scheduled to begin operating on the Moscow-Lima route in August this year. [By PRAVDA correspondent] [Text] [Moscow PRAVDA in Russian 19 Jul 85 p 2] 8936

AN-124 SETS WORLD RECORDS--World aviation records for load capacity were established in the USSR on 26 June by the An-124 wide-bodied transport ("Ruslan"). The An-124's highest achievement is to carry a load weighing 171 tons and 219 kilograms to an altitude of 10,750 meters. Data on the record flight are being sent for registration to the Federation Aeronautique Internationale (FAI). At present, the officially registered record for load capacity is the carrying of a load weighing 111 tons and 461 kilograms to an altitude of 2,000 meters, established by the American C-5A Galaxy aircraft in December 1984. [By TASS correspondent] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 28 Jul 85 p 2] 8936

PLANNED TBILISI AIRPORT IMPROVEMENTS--(GRUZINFORM)--[Responding to a ZARYA VOSTOKA reader's question concerning prospects for further development of civil aviation in the GSSR, A. Zedginidze, chief of the Georgian Civil Aviation Administration, states:] Further development of flights on domestic and international air routes have been planned for the long term--the 12th Five-Year Plan and up to 1990. In this connection, construction of a new runway at the Tbilisi airport, as well as a city air terminal to accommodate up to 1,500 passengers hourly, in a complex with a hotel in the region of the "Didube" metro station, is stipulated in the future five-year plan. Replacement of the current fleet of aircraft has been stipulated by the long-term plan for development of the Georgian Civil Aviation Administration. With the aim of ensuring regularity of flights to airports in Georgia's mountainous regions, safety and high-quality service, it is planned to provide for passenger transportation to all airports in the republic in new aircraft (instead of being limited to the L-410 and An-2 aircraft available). This will enable us to increase the traffic volume within the republic by 1.5 times as much. Flights in Il-86 aircraft are planned after reconstruction of the Tbilisi airport has been completed. [Excerpt] [Tbilisi ZARYA VOSTOKA in Russian 8 Jun 85 p 3] 8936

NEW AIRPORT IN ZANGEZUR--In the mountains of Zangezur on the territory of the Goris airport, located at an altitude of 1,500 meters above sea level, a new airport building has started operating. The beautiful, three-story building of local construction materials -- granite, basalt and marble -- is fitted out with modern equipment that will make it possible to carry out flights in complex meteorological conditions. The inhabitants of the city and villages of the largest region of the republic will now have dependable transportation connections with Yerevan. Comfortable YaK's will deliver the passengers to their destination point in a half hour. It has become possible to receive modern airliners here since the reconstruction of the landing strip. "We will receive and send out four flights daily," said airport chief A. Mirzoyan. "With time, their number will increase, since a base airport is scheduled to be established here, which will unite Zangezur by an air bridge with Moscow, certain cities of Central Asia and the country's health resorts." [By S. Nuridzhanyan] [Excerpt] [Yerevan KOMMUNIST in Russian 3 August 85 p 4] 12962

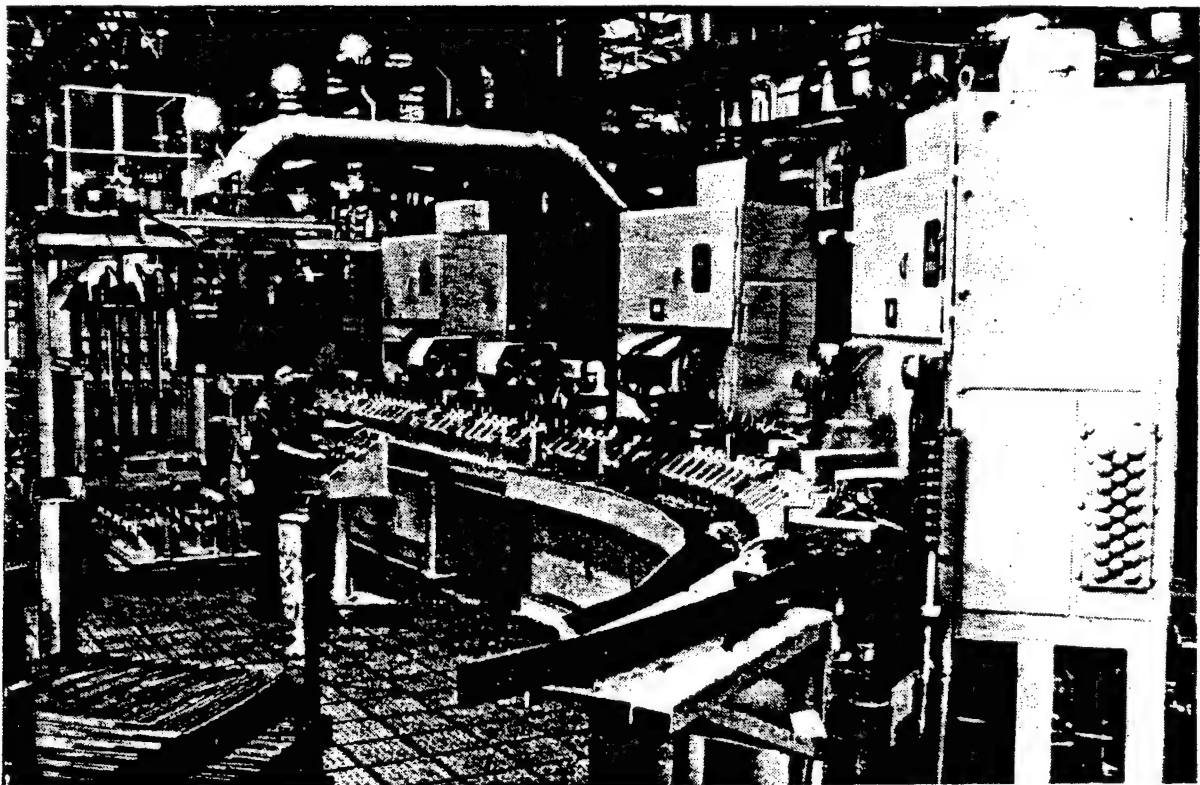
## MOTOR VEHICLES AND HIGHWAYS

### NEW TECHNOLOGY IMPROVES ZIL TRUCK PRODUCTION

Kishinev SOVETSKAYA MOLDAVIYA in Russian 8 Aug 85 p 2

[Unattributed article: "New Technological Process at ZIL"]

[Text] The collective of the I. A. Likhachev Moscow Automobile Plant constantly puts a lot of effort into raising the technological level and best utilizing the achievements of scientific-technological progress. Thus a new technological process has been developed at the enterprise, and automatic lines for heat treatment of spring leaves of trucks have been placed in operation. This permits greatly increasing the strength of the spring leaves and thereby extending their service life. A metal savings of 269 tons per year is simultaneously achieved.



In the p

In the photo: A general view of the automated line set up in the spring workshop. A new technological process for the fabrication of spring plates for trucks is used on the line.

Implementation of the new process has sharply improved work conditions, permitted using water instead of quenching oil, and made it possible to reduce the weight of each spring by 9.3 kilograms.

Patents have been obtained in England, the USA, West Germany, Japan, and France for the new technological process and the equipment for its implementation.

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## MOTOR VEHICLES AND HIGHWAYS

### NEW REFRIGERATED TRANSPORT TESTS; BAKU PLANT MODERNIZATION

Baku VYSHKA in Russian 29 Aug 85 p 1

[AZERINFORM article: "The Second Birth of An Enterprise"]

[Text] BAKU, 28 August. Specialists of the All-Union Avtobusprom Experimental Design Bureau and the Baku Specialized Vehicles Plant have developed a new motor vehicle for the transport of products. Two test models of the newcomer created at the enterprise are successfully undergoing testing.

The new vehicle, whose body is a giant thermos which maintains a low temperature for a long time, differs significantly in many parameters from its own brother presently being produced by the Baku workers. The load capacity of the machine has been increased by 300 kilograms while its total weight has been reduced by 240 kilograms. The newcomer will permit the autoworkers to save up to 500 tons of metal everyday. Careful analysis of the opinions of users has suggested to the designers a solution which involves altering the structure of the cab so that one more person can now be accommodated.

Preparing for the industrial production of the newcomer, the Baku autoworkers are introducing important corrections into their own work. During the next Five-Year Plan the capacity of the plant will more than double.

"Our young enterprise will literally experience its second birth," said chief plant engineer Sadyg Aliyev. In the very near future new body-pressing and mechanical buildings and storage areas will appear. Replacement of equipment will occur in all departments through the efforts of in-house maintenance brigades. New presses and semi-automated welding stations have been installed and successfully mastered. We shall begin in the present year the installation of new conveyors--the painting and assembly ones. All of this will make it possible to raise the capacity of the enterprise without increasing the number of people working in it.

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MOTOR VEHICLES AND HIGHWAYS

DELAYS IN NEW DIESEL-POWERED ZIL-4331 TRUCK PRODUCTION

Moscow PRAVDA in Russian 22 Aug 85 p 1

[Article by Yu. Medvedev: "First Sample"]

[Text] The obligation to manufacture a test-series batch of new ZIL-4331 highly economical trucks with diesel engines is written in the socialist commitments of the collective of the ZIL Production Combine for the present year published in PRAVDA.

Production of this combine is well known both to us and abroad. One-fourth of all the trucks in the country are provided by universal reliable machines with the ZIL label. And its domestic refrigerators are rightfully considered by us to be the best; they stand up to competition on the world market.

A few words about today's production. One can hardly note any differences between the contemporary ZIL-130 and a first-year model. But there are differences. And they are not minor. For example, laser strengthening of the cylinder head block has increased by a factor of one-and-a-half the service term of the assembly. The introduction of a vortical motion of the gas charge has reduced fuel consumption by 4 percent. There are many other technical innovations. Following their own long-established tradition, the ZIL workers have "stuffed" into the diesel engine and the vehicle itself the most modern developments, of which present-day automobile manufacturing practice has an abundance.

Two bright-red vehicles stand in one of the sections of the experimental building. Instead of numbers there are stencils on them with the short word "Test." These are the first-born--twins of the ZIL-4331 truck. It differs greatly from its predecessor. Both in its outward appearance and in its technical characteristics. For example, the spacious trailers and semi-trailers allow taking on board loads heavier by 2.5-4.5 tons than could the previous model.

And of course the main difference is the ZIL-645 diesel engine. True, it is more complicated to manufacture, but then it reduces fuel consumption by almost 30 percent, decreases the costs of technical maintenance, and will save more than a thousand rubles per year in a single TRACTOR-TRAILER RIG.

The specialists of plant control of design and experimental work have created a new diesel. They have exhaustively studied the experience of domestic and foreign engine manufacture. Designers A. Kondrikov and E. Alenovskiy have made a major creative contribution. Engineers L. Solomonov and V. Kharin actively participated in development of the original 8-speed transmission. It permits the vehicle to move at slow speeds, which is convenient for maneuvering, interacting with agricultural harvesting units, and climbing steep hills.

Specialists and scientists of the Central Scientific Research Automobile and Automotive Institute, the Moscow Auto Highway and the Yaroslavl Polytechnical Institutes, and a number of others participated hand in hand with ZIL personnel in the creation of the "heart" of the machine. This fusion has given good results.

The designers have also worried about improving operating conditions for the driver. A suspension with hydro-shock absorbers will significantly decrease jolting of the cab. One can set the steering wheel higher or lower, get closer to it or further away, as it would be more convenient. The cab is well heated, ventilated, and protected from noise and dust. The hood and fenders, hinged as a single unit, provide for easy access to the engine and its systems. Tests on the proving ground in the city of Dmitrov near Moscow and long trips by TRACTOR-TRAILER RIGS FULL LOADS--a load of 14 tons to Yakutia, Central Asia, and Pamir--have shown convincingly the value of all these qualities and a number of others.

In order to rapidly verify the engineering solutions, completely implement the desires of consumers in the new design, and put it into mass production, the ZIL people have decided to start producing the diesel machine at existing facilities even prior to creation of the major output capacities.

...The auto assembly building of the plant is enormous and crowded. Chassis on the main conveyors, accumulating parts and assemblies, are transformed before one's eyes into brand-new ZIL 130s, which in due course are smartly taxied to the delivery area. In a year--more than 200,000 units [are produced]: dump trucks, tow trucks, loaders and special-purpose vehicles.

An unusual production [area] attracts attention in the center of the building. This is the section where the new trucks are assembled. It was right here that the first ZIL-4331 entered in February from the experimental building.

The best of the best workers and specialists with top professional skills and a creative bent were invited to study the technical nature of the vehicle. To start with, they "went for a spin" in the new truck for a test. Then they disassembled the machine down to the last screw. Analysis of the auto assembly processes, exposure of design errors, and improvement in the technological nature of the vehicle was begun.

By today more than ten ZILs of the recent model are completely ready. The assembly has gone faster and faster with each truck. Time, experience, and skill tell. It has been decided to produce fifty diesel machines by the 27th Party Congress.

However, the path from design to mass production of vehicles is not a rapid one. One can and must shorten this time. That's what they think at ZIL. It helps to make this a highly efficient plant. There are now in the plant's workshops many machining centers and machine tools with numerical program control. The diesel machines will be manufactured with extensive application of flexible production systems (FPS) and lightly manned technology. The preparation is now actively proceeding for creation of the capacity for fabrication of the new truck.

Now there are many builders in the combine. They are installing in Moscow the pressing-welding and body production, and a work-shop for plastic parts is being created. A plant is being built at Yartsev in the Smolensk region for the manufacture of diesel engines, and iron foundry workshops are being completed.

But things are not going in all of these matters the way the ZIL people would like to see them going. At the very same Yartsev diesel plant the builders have not finished three million rubles of work during the first half of the year. And this debt increases with each day. They are being seriously let down by subdivisions of the VSSR Ministry of Energy and the USSR Ministry of Installation and Specialized Construction Operations. Due to their sluggishness, the timetables for introduction of the production capacities are threatened.

The ZIL people are sparing no effort to bringing closer the day on which highly economical diesel trucks second to none in the world will steadily emerge from the main conveyor.

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MOTOR VEHICLES AND HIGHWAYS

BRIEFS

BRIDGE PLANNED IN SALYANY--Salyany (AZERINFORM)--A new bridge across the Kura River, construction of which was begun in Salyany, will speed up the shipment of agricultural freight from the republic's southern region to its central rayons. This bridge, with two-way traffic on the Baku-Astara route, will be the largest in Azerbaijan. Strong all-metal spans will ensure its reliable operation. The date planned for commissioning of the project is 1989. However, the workers of Bridge Detachment No 100, who are working on its construction, intend to shorten the periods established. [Text] [Baku VYSHKA in Russian 2 Apr 85 p 2] 8936

RAF MICROBUS TESTING COMPLETED--Yelgava, Latvian SSR--Tests of a modernized model of the "Latviya" microbus--the "RAF-22038," earmarked for series production, have been conducted successfully. The new "little RAF" consumes fuel much more economically and the toxicity of exhaust gases is minimal. Replacement of the gasoline engine by a diesel has been specified. The vehicle accelerates to 125 kilometers per hour. Additional steps also have been taken to ensure passenger safety in emergency situations. There is a hatch in the roof for evacuating people. The safety steering column moves forward without injuring the driver. The body has been made more reliable; supports to reduce vibration and a transverse partition which separates the driver's work place have been developed. At the same time, the metal input in manufacture of the "Latviya" is being reduced by more than 40 kilograms as much, owing to the use of a number of plastic parts. The new vehicle, as well as its predecessor, is the creation of the specialists of the "RAF" Microbus Plant in Yelgava. [By correspondent V. Proskura] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 Apr 85 p 2] 8936

KROPOTKIN ATV'S IN TESTING--Kropotkin--The basic product of the Kropotkin Machine Building Plant of the Ministry of Construction of Petroleum and Gas Industry Enterprises is a marsh tractor designed for those who lay the routes for the oil and gas mainlines. Lately it has undergone significant design changes--it has become more economical, mobile and convenient to drive. Soon a self-propelled vehicle for insulating operations will be put into operation for builders of the oil and gas pipelines. Tests are being conducted successfully under field operations of two of its modified versions: the "IM-531" and the "IM-831." There is one more innovation--a winch to pull the siphons across water obstacles, the "AP-151." [By N. Sedov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 4 May 85 p 2] 8936

**BYPASS CONSTRUCTION IN GEORGIA--Sukhumi--**The first section of a bypass road for the city of Ochamchira is being laid out. The future vehicle route which bypasses a rayon center of the Abkhaz ASSR will extend for 11 kilometers. An overpass is being built over the Ochamchira-Tkvarcheli railway branch line. Bridges are being built over the Mokva and Galidzga mountain streams. The highway bypassing the city will free the residents and their guests from vehicle noise and exhaust gases. A bypass route for Sukhumi also is being built. The first section of a similar highway for the Gagra resort will be laid out this year. [By A. Klyuyev] [Text] [Moscow PRAVDA in Russian 17 May 85 p 6] 8936

**9 MILLIONTH VAZ CAR--Tolyatti--**Yesterday the 9 millionth passenger automobile came off the assembly line at the Volga Motor Vehicle Plant. It was a bright, gleaming snow-white "VAZ-2108"--the "Sputnik." This is the basic model of the new family of economy cars with front-wheel drive which the Volga vehicle workers have put in series since the beginning of this year, the first ones in the country. Development of new production models is being carried out at the same time. A modified version of the original vehicle with front-wheel drive --the "VAZ-2109"--has been sent out for tests. The first models of a vehicle with very small displacement--the "VAZ-1111"--also have been manufactured. In preparing to greet the 27th CPSU Congress in a worthy manner, the VAZ collective provided consumers with 1,779 fast and comfortable "Zhiguli" cars in just 4 months this year. [By N. Chulikhin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 25 May 85 p 1] 8936

**MAZ WORKS AUTOMATED LINE--**The first automated line for galvanizing metal parts has been started at the Minsk Motor Vehicle Plant. Such equipment is capable of processing up to 8 tons of output during a shift. The line was manufactured at the testing plant of the Lvov Experimental Design and Technological Institute of the Automotive Industry. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 85 p 2] 8936

**RADOMYSHL DUMP TRUCK PRODUCTION--**The Radomyshl Machine Building Plant imeni October Revolution in Zhitomir Oblast has put heavy trucks for transporting wood chips [avtomobil-shchepovoz] into series production. Each vehicle is capable of carrying up to 70 cubic meters of material, taking the place of 10 ordinary dump trucks. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 25, Jun 85 p 3] 8936

**ROBOTICS AT GAZ WORKS--**The first robotized section with flexible readjustment technology has been set up at the Gorkiy Motor Vehicle Plant to control machine tool manufacture. The successful transition to a new technological level, which the enterprise has to make in the next 5 years, depends precisely on the efficient operation of this subunit of the automotive giant. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 25, Jun 85 p 3] 8936

**NEW KAZ TRUCK TRAIN--**The collective of the Kutaisi Motor Vehicle Plant association is successfully implementing one of the requirements of the Food Program, which calls for the development of capacities to produce truck trains for agricultural purposes. The new general-purpose "KAZ-4540" truck and trailer is capable of carrying loads of 10 to 12 tons. The economical 160-

horsepower diesel engine provides it with good dynamic characteristics--the truck train is capable of working with a slow-moving combine during the harvest and of rapid transport on highways. Last year 500 of the first truck trains underwent tests at various agroindustrial complexes in the country. The Kutaisi motor vehicle workers, in assuming labor shock duties dedicated to the 27th CPSU Congress, have pledged to ensure the output of 3,000 "KAZ-4540" truck trains for the countryside at the same time that production of their basic output--the "Kolkhida" vehicles--is increased in the final year of the 11th Five-Year Plan. [Text] [Moscow PRAVDA in Russian 12 Jul 85 p 1] 8936

KARSHI LNG FILLING STATION--UZTAG--An automatic filling station to refuel vehicles with natural gas has been put into operation in Karshi. This is the fourth such station in Uzbekistan. "The new fuel is very convenient and efficient," says ZIL-130 driver A. Avatesyan. "The liquefied methane, put into a special tank, provides for a run of 220 kilometers. At the same time, there is less wear and tear in the engine and it operates better. The engineers say that the discharge of harmful substances into the atmosphere has been sharply reduced. If I run out of gas on the road, I can immediately switch to the reserve tank which carries ordinary fuel..." Each vehicle which makes use of the gas filling station saves an average of 4,000 liters of gasoline per month. However, the new station is serving only 30 vehicles at present, although it can handle 500 vehicles a day. Managers of Kashka-Darya Oblast garages are not in a hurry to begin wide-scale readjustment of existing equipment for the gas fuel. [Text] [Tashkent ZARYA VOSTOKA in Russian 20 Jul 85 p 3] 8936

GORLOVKA LNG FILLING STATION--Donetsk Oblast--A gas filling station designed to refuel 500 vehicles a day has been put into operation in the mining city of Gorlovka. The use of gas instead of gasoline will enable the city to save more than 1,500 tons of petroleum products annually and to improve the air quality significantly. The filling station was built by collectives of the "Donetskmetsallurgstroy" trust, which provided Donetsk with the same type of facility last year. Construction of the same type of filling stations is planned for the near future in Makeyevka, Zhdanov and Slavyansk. [By correspondent N. Lisovento] [Text] [Moscow IZVESTIYA in Russian 16 Jul 85 p 1] 8936

CSO: 1829/247

## RAIL SYSTEMS

### MINISTRY OFFICIAL DECRIES BUREAUCRATIC INFIGHTING

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 2 Oct 85 p 2

[Article by V. Medvedev, head of the MPS [Ministry of Railways] Department of Shipment Rationalization: "As An Exception: Why Do Inefficient Shipments Continue?"]

[Text] Who does not know Ostrovskiy's play "The Forest?" In it there are two wandering actors. One in wandering from Kostroma to Vologda in search of happiness, the other, in the opposite direction, from Vologda to Kostroma. And so as not to wear out the heels of their shoes, they are both walking barefooted, with their boots slung over their shoulders, they are conserving their "means of transport," so to speak.

It would be nice if some other managers, on whose instructions trains loaded with timber are rushing toward each other over hundreds or thousands of kilometers, would take such concern. As an example, the USSR Minenergo [Ministry of Power and Electrification] moves lumber from enterprises of Bratskgesstroy and Krasnoyarskgesstroy to customers on the Northern, Gorkiy, October and Belorussian Railroads, distances of 3,000-5,000 kilometers. At the same time, timber is being shipped in the opposite direction to Siberia from enterprises of USSR Minlesbumprom [Ministry of the Timber, Pulp and Paper and Wood Processing Industry] and other ministries situated within these lines' spheres of operation.

For many years now, hundreds of thousands of tons of coniferous saw logs have been dispatched from a railroad zone in the Ivdel-Ob sector to the Tyumen area to meet a massive flow of timber coming from eastern Siberia into the European part of the country.

What generates these senseless shipments? The answer is known -- jurisdiction. Sixty plus departments and 12 gosplans for the union republics distribute timber products. They have already carried out shipment of 35 of 150 million tons of lumber cargos. Naturally, each is looking from his own belfrey. And he does not know, or more correctly, does not want to know what is going on outside his own neighborhood. After all, why complicate ones life with extra bother, why think of efficient utilization of transport? It is much simpler to shift these worries over to railroad workers. Let them rack their brains.

A reasonable question arises: normal freight flow direction systems exist, and they provide exactly for efficient shipments without runs coming from the other direction. These systems are coordinated by ministries and departments, and they are confirmed by the national Gossnab and the MPS. It would seem that now these systems should take on the force of law and be irreproachably observed.

If only it were so. Unfortunately, the efficiency of these systems is poor. How many lances have been shattered in the battle for their execution. The pouch we have is already swollen with correspondence with ministries and departments. More than once, executives of the Ministry of Railways have approached D. Didkovskiy, Deputy Minister of the Ministry of the Timber, Pulp and Paper and Wood Processing Industry and A. Lebed, Deputy Chairman of USSR Gossnab with the request that they instill order, cease the shipments in opposite directions and think through the efficient dispatch of lumber products.

There exist on this account appropriate directives of the national Gosplan. Inefficient shipments of timber products into the Tyumen region was permitted by this document as an exception in the years 1981, 1982 and 1983. Moreover, it was entrusted to the national Gossnab and USSR Minlesbumprom to insure the supply to sawing enterprises of Tyumen Oblast in strict accordance with confirmed freight flow systems, beginning in 1984, having in mind that the necessary measures would be taken to eliminate shipments running in opposite during that time.

An interdepartmental commission on the rationalization of freight shipments which is affiliated with USSR Gosplan sent a letter to USSR Gossnab and the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry. In it, it was stated in black and white: "Gosplan does not consider realization of the indicated shipments possible in 1985 and supports the proposal of the Ministry of Railways for satisfying the demands of the sawing enterprises of Tyumen Oblast from the organizations of the USSR Minlesbumprom situated in eastern Siberia for saw logs."

It was stated precisely and categorically. And the shipments in opposite directions continue to this day. Because Gossnab and Minlesbumprom have again gained permission for inefficient shipments. Instead of compelling the Minlesbumprom's enterprises to improve timber processing on the spot, Gossnab chose a course which is easier for itself but which imposes greater overhead on the economy.

And timber is by no means the only cargo which makes the journey in opposing directions. Conversations about chaotic shipments of reinforced concrete have already stuck in our teeth. And the interdepartmental commission on shipment rationalization has issued decisions on it more than once. However, these instructions which are "mandatory for execution" are not observed.

As an example, the USSR Ministry of the Coal Industry has been attacking transport and other organs and are asking for delivery of massive forms or reinforced concrete for construction of the Ekibastuz and Kansk-Achinsk power complexes from regions within the operational sphere of the Northern and

Donetsk Railroads. From here to the Tselin and Krasnoyarsk Railroads, where their route lies, is about 5,000 kilometers. The interdepartmental commission on rationalization of shipments has required since the start of the five-year plan that the ministry satisfied the demands for reinforced concrete at complexes under construction from dearby regions, that they develop their own construction industry there. There exist possibilities for this. Numerous enterprises of USSR Minselstroy [Ministry of Rural Construction], USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises], Mintransstroy [Ministry of Transport Construction] and the USSR Minugleprom [Ministry of the Coal Industry] itself, of which there are many here, produce this product. But nothing has been done. And no large expenditures or transport facilities are required for this. Only a state of organization and maintenance of State and plan discipline are needed.

Many such examples using nonmetalliferous materials and metallurgical products, particularly scrap metal could be cited.

May it be unknown how to correct such a matter? Not at all. There is no shortcoming in the proposal. Let us take the same timber. Soyuzglavles [Main Administration for Supply and Sales of Timber Products Affiliated with USSR Gossnab] plans centralized shipments, but only resources of USSR Minlesbumprom and USSR Gosleskhoz [State Committee for Forestry]. The rest is in the hands of dozens of ministries, and for them, the Soyuzglavles plan is not law; they ship in a manner most convenient for themselves.

Obviously, it is necessary to concentrate all forest resources in one set of hands -- Soyuzglavles. This would straighten out shipment planning and increase responsibility for efficient transport utilization.

It is the same way with reinforced concrete. There is a division for planning the delivery of reinforced concrete articles in each ministry. Is it not possible to unite them under a single roof, that of, let us say, the very same USSR Gossnab? Work precision will increase, and, simultaneously, the administrative staff will be reduced.

And again. It has been proposed several times to impose increased tariffs for inefficient shipments. Talks have been in progress for a long time concerning the necessity of including transport costs within the costs of a product being made, of establishing their limits for all ministries and departments. By the way, accounting and planning for transport costs will be started this year as specified by the CPSU Central Committee and USSR Council of Ministers decree on perfecting the economic mechanism in transport.

USSR Gosplan has worked out a method for calculating transport costs and has sent it around to the ministries and departments. It limited itself to this, but they continue to work as before. In a word, the paper merry-go-round goes round and round. The end is not in sight. The same as with inefficient shipments. Which were permitted only as an exception.

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## RAIL SYSTEMS

### FUTURE DEVELOPMENT OF TASHKENT METRO

Tashkent ARKHITEKTURA I STROITELSTVO UZBEKISTANA in Russian No 6, Jun 85  
pp 11-12

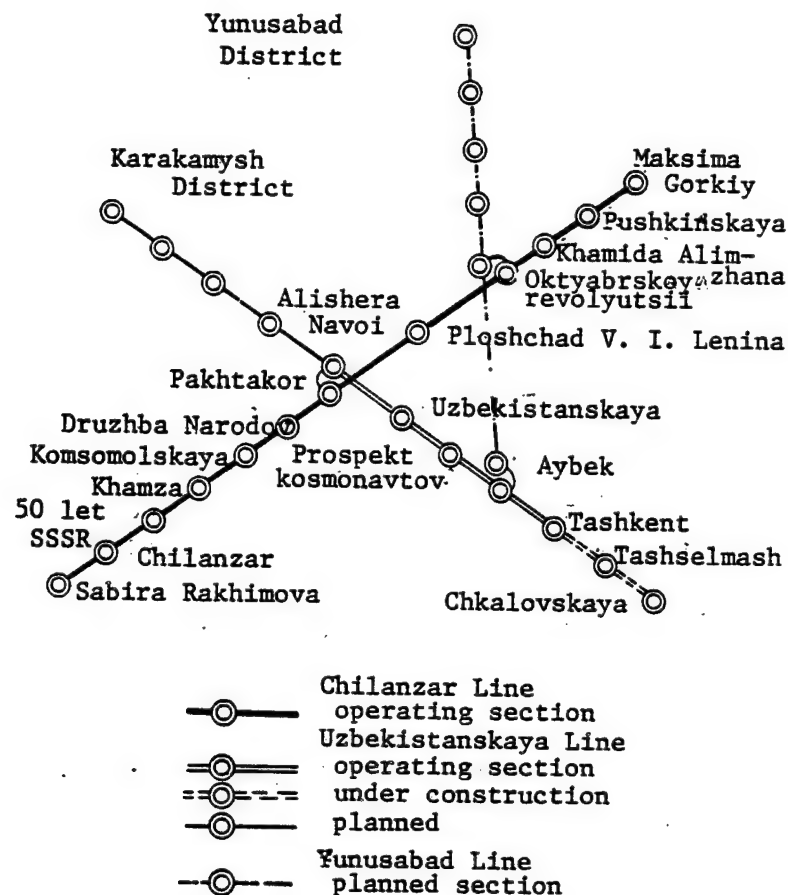
[Article by Engr A. Z. Zakirov and Architect Ya. Mansurov from the Tashkent Metro Design Institute: "Future Development of the Tashkent Metro"]

[Text] Due to the joint work by designers, artists, construction workers and the inhabitants of Tashkent, the new Uzbekistanskaya Line has been put into operation. The metro in Tashkent, the first in Central Asia, in contrast to analogous facilities in other cities of the nation, has its specific features since it is built under the conditions of a hot climate, seismicity and subsidence of the ground which have caused the adopting of a number of new engineer decisions.

The layout and architectural-artistic plans for the stations have been subordinate to ensuring passenger convenience, to satisfying operational requirements as well as to the particular features of the above-ground urban development in the location of the stations. Long-lasting finishing materials such as marble, granite, metal, glass, ceramics and so forth have been used in the interiors of the platform chambers, lobbies and pedestrian passages.

In the architectural and artistic planning of the line, great attention has been given to a diversity of station structural types and this has determined the nature, unity and sequence of the line in the recognizability of each individual station. The Tashkent Station is a column type and widely employed on the first line. It is located under Privokzalnaya Ploshchad [Station Square] with exits to the railroad station, the Administration of the Tashkent Division of the Central Asian Railroad, to the Locomotiv Hotel, to the monument of the 14 Turkestan Commissars, to the Uzbekistan Club and to other administrative-economic and residential buildings. Two underground lobbies of the station have been designed together with subterranean passages. The pedestrian passages have been designed considering a further extension toward the railroad station and the platforms of the railroad tracks. Above the stairwells to the platform are relief heraldic compositions with decorative illumination on the subject "2000 Years of Tashkent" and a composition with the crest of the capital of Uzbekistan. Together with the artistic compositions on the track walls of the platform chamber they depict the subject "Tashkent--A City of Peace and Friendship." The design of the station

is complemented by the architectural and artistic design of the walls and columns with stalactite capitals supporting a ribbed ceiling with star-shaped inserts.



The Aybek Station is located beneath Prospekt Kosmonavtov at the intersection with Lakhuti Street. The station with a column-type platform from large three-dimensional elements of a seismic-resistant design was introduced for the first time on the Tashkent Metro lines. The design of this station was accepted by the State Commission with an evaluation of "excellent." Its distinguishing feature, in comparison with the existing stations, is the increased degree of industrial prefabrication. For a comparison: the percentage of prefabrication for a standard column-type station is 52 percent and for Aybek Station 91 percent. The platform has two lobbies designed together with subterranean passageways with exits to the Ministry of Agriculture, the Pharmaceutical Institute and other administrative and residential buildings and installations. The triple-span arched ceiling rests on the track walls and columns faced in warm-tone marble. On the columns, there are vertical bands from ceramic tile with a relief of intertwined plant and geometric ornamentation. Above the stairs to the platform are artistic



high reliefs in the form of an open book depicting the heroes of the works of Aybek. The writer is shown in one of the compositions.

The Prospekt Kosmonavtov Station is located in the central part of the city under the prospect of the same name and the intersection of Lenin Street with exits to Lenin Boulevard to the square with the bust of the Cosmonaut V. A. Dzhanibekov and to the administrative and residential buildings. The design of the platform is of the column type. In contrast to the standard ones, the supports have a round section. Two underground lobbies designed together with subterranean pedestrian passages are connected to the platform by stairways. The interiors of the lobbies are unusually designed. The columns faced with mirrors and metal support the ceiling elements which are lined with light open grids. The track walls are faced with a ceramic figured tile, from white to dark blue with thematic inserts in the form of 12 medallions. These show the stages of the study and conquering of space (from the times of Ulugbek up to our contemporaries working on the study of outer space). The lined ceiling is pierced in the center by a light strip from open work molded glass. The circular columns faced with glass combined with metal, granite, different colored marbles and artistic ceramic help to create the image of the station.

At the intersection of Abaya Street and Sh. Rashidov Prospect is Uzbekistanskaya Station. In its passenger-forming area are located: the Cooperative Club, the Forester's Club and other buildings and installations. The light, spacious arched-design platform chamber with two underground lobbies is combined with underground passages. The platform chamber of the station is illuminated by lights in the form of a cluster of cottonballs on protruding arms. The track walls are faced with marble, granite and artistic ceramic. At the ends of the platform are Florentine mosaic panels showing the achievements of our republic.

The Alishera Navoi Station is a transfer station with a connection to the existing Chilanzar Line. It is located beneath Abaya Street and has exits to A. Navoi Street to Avenue Poezii, to the A. Navoi Museum, to the Merchant Stalls and other administrative and residential buildings and structures. The station has a platform chamber of the column type with two underground lobbies designed with subterranean passages. One lobby is a transfer point designed as part of the underground lobby of Pakhtakor Station. The elements of the platform chamber are made individual by increasing the height.

The interior is a columned, three-span room with typical dimensions in the plan view. The white marble columns overhead change into arched braces on which rest domes with geometric and plant ornamentation of three-dimensional ceramics and girdled by cornices and standards. On the track walls in the center of the platform chamber are located monumental artistic compositions illustrating the works of Alishera Navoi "Leyli i Medzhnun" [Leyli and Medzhnun], "Farkhad i Shirin" [Farkhad and Shirin], "Stena Iskandera" [Alexander's Wall] and "Sem planet" [Seven Planets]. At the ends of the chamber these terminate in heraldic compositions. In the transfer lobby, there are artistic compositions located around a bas-relief of the poet-thinker. Above the escalator chamber of the transfer lobby is an artistic wall panel from ceramic made analogous to the domes of the platform chamber.

The transfer center at the station is one of the most complicated production, functional and design structure and is a first in the building of the Tashkent Metro.

In the interiors of the stations on the Uzbekistanskaya Line, along with the traditional materials of marble and granite, they have also widely used ceramic. Along with the other materials, it has helped to create an image of each station and a definite integrity of the line.

At present, the collectives of designers and construction workers are at work building the second nearly completed section of the Uzbekistan Line from Tashkent Station to Chkalovskaya Station the completion of which is planned in 1987. At the same time, preparatory work is underway to extend this line from Alishera Navoi Station toward the Kara-Kamysh residential district and this should be complete at the end of the 12th Five-Year Plan. According to a long-range comprehensive plan for the transport in the capital, in the general development plan for the Tashkent Metro they envisage the construction of a third line running between the Yunus-Abad residential district and the airport. The intersecting of the three metro lines at the Alishera Navoi--Pakhtakor, Aybek and Oktyabrskaya Revolyutsiya Stations, form a transfer triangle which provides maximum convenience for the passengers.

The adopted plan for the metro lines running through the major passenger-forming areas of the city is a frame for the transport structure of the city. It will help coordinate the operation of other types of surface transport and its effective employment in the aim of ensuring maximum convenience and minimizing time expenditures in traveling.

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## RAIL SYSTEMS

### 'SANDWICH' REFRIGERATED CAR PRODUCTION DELAYED

Moscow GUDOK in Russian 4 Jul 85 p 3

[Article by correspondent B. Kolesnikov from Bryansk and Moscow: "The 'Sandwich,' an Aging Model"]

[Text] Acceleration of scientific and technical progress in rail transport is inseparable from the updating of technical facilities, including rolling stock. As far back as the 1960's a new term defining a promising type of refrigerated car--"sandwich"--appeared in refrigerated car manufacturing.

"In 1980 we must produce the 'sandwich'--an experimental model of a unit with which future refrigerator technology is linked to a considerable extent--to order for the MPS [Ministry of Railways]."

This is what M. Berenshteyn, chief designer for railway car manufacturing of the Bryansk Machine Building Plant Production Association, told our correspondent. The editorial staff decided to inquire about the fate of the experimental model.

I saw the "sandwich" 2 years ago on one of the sidings of the Moscow hub. From the exterior it appeared no different from its brothers in series production. Only a bright blue letter "S" on the body distinguished it from other refrigerated cars.

Let us recall briefly where its name comes from. The body of the car is prefabricated from panels--the roof, floor and walls. Polyurethane, a good heat insulator which gives metal high anticorrosive properties, is poured between the exterior and interior panels. The outer casing of a normal refrigerated car rusts in approximately 7 years. Its service life also is designed for this.

The "sandwich" railway car was built in accordance with the principle of panel housing construction through the efforts of collectives of scientists, designers, engineers and workers of the Bryansk Machine Building Plant, the

VNII [All-Union Scientific Research Institute] of Railway Car Manufacturing, the Ural branch of the VNIIZhT [All-Union Order of the Labor Red Banner Scientific Research Institute of Rail Transport], and the Vladimir VNII of Synthetic Resins.

Liquid polyurethane foam is poured into the "reinforcement" of the body. It froths. In hardening, the mass adheres tightly to the metal casing; there are no gaps and seams through which air, with moisture, could penetrate.

They promised a great future for the "sandwich" in its first steps. Here are its basic advantages: no maintenance for the body, and consequently, a long service life. Capacity increased by 10 percent. High constant heat insulation properties and airtightness. Less energy consumption to create the necessary temperature conditions. The experimental models of the "sandwich" passed the test successfully, undergoing operational testing on the country's eastern main lines. They completed scheduled trips with freight as part of ordinary RS4 [expansion unknown] sections.

Specialists of the two ministries concerned--the Ministry of Heavy and Transport Machine Building and the Ministry of Railways--have already calculated the economic gain which introduction of the "sandwich" would yield for a network of railroads. It turned out that it was considerable, but... years passed before the Bryansk machine builders turned out two experimental models of a hybrid refrigerated car with the aim of introducing the "sandwich" in stages. Their roof and floor were made in accordance with the new technology. The rest of the body's construction was left as before.

Such a version by now, in a period of reorganization of railway car production, may be accepted as transitional. It was even planned that the adjustment batch [ustanovoch'naya partiya] of such cars would leave the shops of the enterprise at the beginning of the next five-year plan with the estimate that the plant would shift to series production of them in 1988. However, it is as far away from that event today as it was on the day that the first experimental car with the letter "S" on its corrugated side made its appearance on the rails.

In order to gain an understanding of the problems preventing introduction of the "sandwich" into mass production, I went to the All-Union Scientific Research Institute of Railway Car Manufacturing, where I met its director, Candidate of Technical Sciences A. Rechkalov.

"Our position as a scientific research center," the institute director explained, "is for the most expeditious introduction of a product which we have participated in developing. Practically all the complications of a technical and design nature attending manufacture of the new model of rolling stock have been overcome."

A subsequent conversation was held with E. Vasilyev, the chief engineer of the "Soyuzteplovoput'mash" [All-Union Diesel Engine Construction and Track-Laying Machine Building Industrial Association] of the USSR Ministry of Heavy and

Transport Machine Building, which has jurisdiction of the Bryansk Machine Building Plant Production Association. Learning the purpose of my interview, he immediately referred to the difficulties...

"In the BMZ [Bryansk Machine Building Plant] at present," he said, "they are setting up large-scale diesel production; it will occupy about 120,000 square meters. In the new building complex they will be turning out engines for main line diesel engines. This is well known in the Ministry of Railways. We do not have the means to renovate the railway car section as well at the same time. At present, it is a little early to talk about preparing capacities for shifting the "sandwich" to series production."

You will agree that this is a strange position. The railway workers are the customers: they need both diesels and railway cars. So we must look for ways to meet the demand. After all, this concerns technical progress in the field of refrigerator construction. The fulfillment of one of the points of the Food Program--preserving food products during shipment.

Unfortunately, the prospects for the "sandwich" today remain hopeless, as they were 7 years ago when it was built. You become convinced of this once again, after speaking with the chief engineer of projects for the Bryansk Machine Building Plant of the "Giprotyazhmash" [State Institute for Project Planning of Heavy Machine Building Plants], V. Barinov. Thus far this organization has not transferred technical documentation to the plant for manufacturing the "sandwich." The designers screen their inactivity with the fact that time periods for completing the project planning were not specified in the planning assignment.

And only one organization--the "Soyuzkhimplast" [All-Union Industrial Plastic Compounds Association]--is expressing readiness to begin mass production of the "sandwich."

"From our point of view--chemical technology, the problem of the 'filling' for the type 'S' refrigerated car-- has been worked out," says Ye. Volchkova, the chief technologist. "The Vladimir Scientific Research Institute of Synthetic Resins developed two compounds for pouring and spraying polyurethane foam. The ingredients exist for preparing the mixture. However, the section for combining the ingredients [uchastok konfeksionirovaniya] at the Bryansk Machine Building Plant has not been organized. Approximately 3,000 tons of polyurethane foam will be required to begin series production..."

So it is impossible, after all, to order funds for materials if there is no trace of the new production as such, and it is not known exactly when it will make its appearance.

"Will there still be a 'sandwich'?" I put this question to N. Shinkarev, chief of the Transport Department of the USSR State Committee for Science and Technology.

"There certainly must be!" he answered. "The 'sandwich,' which was developed in accordance with the scientific and technical program approved by our committee, meets current requirements demonstrated for refrigerated rolling

stock. The resources exist for organizing its production at the Bryansk Machine Building Plant of the Ministry of Heavy and Transport Machine Building. Although, as in any other new venture, specific difficulties arise. But they are entirely surmountable. The most important thing now is to coordinate the efforts of all the ministries and departments concerned which are responsible for developing and incorporating the new technology to produce the 'sandwich'."

The new refrigerated cars must come to take the place of the outdated models of traditional design more rapidly. In the opinion of specialists in the Committee for Science and Technology, opportunities for this exist at the Ministry of Heavy and Transport Machine Building. So what is holding things up? It is time to switch from hunting for objective reasons to explain the nonfulfillment of long-range plans for developing transport technology to finding the means for their most expeditious implementation.

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## RAIL SYSTEMS

### PROMZHELDORTTRANS BLAMED FOR INDUSTRIAL SPUR LINE PROBLEMS

Leningrad LENINGRADSKAYA PRAVDA in Russian 19 Jul 85 p 2

[Article by A. Potapenko: "The 'Striped' Rail"]

[Text] In checking the condition of sidings to enterprises, a railway worker from the Neva rail freight station discovered that several meters on the approach to the "Bumaga" Association were covered by the lake that had overflowed. A normal situation in the spring or after a heavy downpour. He reported this without delay to the station and declared that the "line was closed."

And three organizations began urgently shuffling official papers on the spot to ascertain who is to remove the "natural disaster." The most surprising thing was that each one had enough grounds...to undertake nothing.

It appeared that this was the direct responsibility of the Industrial Rail Transport Association--"Promzheldorttrans." It was established about 8 years ago to become the intermediary between the October Railroad and its clients, to assume all responsibilities for performing the shunting and freight handling operations on the sidings of industrial enterprises. In other words, for taking care of it completely. But so far it hasn't turned out that way. At one time, "Promzheldorttrans" refused to take responsibility for lines that were in unsatisfactory technical condition.

"Our entire line is now 'striped'," noted N. G. Shukevich, deputy chief of the Neva Station, crosshatching short segments on the diagram of sidings. "The railroad is responsible for part of it, 'Promzheldorttrans' is responsible for another part, and the enterprises answer for a third part. It turns out that there are three custodians for each spur line. And if there is some disrepair, it takes a long time to look for the authority required."

The water remained over the track for several days... Telephone messages were flying to all the organizations. But five persons who spent 3 hours digging out two runoff trenches proved to be sufficient to overcome the emergency...



Unfortunately, this story is not a specific detail, an annoying incident of an accidental nature, but a link in a long chain which originated on the day that the Industrial Rail Transport Association was established. Today it has proved to be unable to perform the duties with which it has been entrusted.

"It looks as if the intermediary organization has been interested in only one thing," N. G. Shukevich shared his impressions, "ensuring that cars are not standing idle on its lines. A commendable objective. It is being achieved by peculiar methods, however. Let's assume many hopper cars with cement have accumulated on the 'Promzheldortrans' lines waiting to be unloaded. After all the times are up, the dispatcher tells us: the cars are in disrepair and the hatches haven't been cleaned off--we cannot unload them. Take the idle cars away."

The reason, of course, is important. All the same, it is not enough to write off the layover of cars to the account of the station, which is not at fault for the unsatisfactory condition of the rolling stock. Moreover, by counting on receiving the cars in good condition, they also are damaging them in the "Promzheldortrans." A recent check in one of its subunits, the Leningrad - Ladoga Industrial Rail Transport Enterprise (PPZhT), showed that brigades are not cleaning the hatches of cement after unloading, and they are breaking up the flooring and warping the sides with bulldozers and power shovels. Leftover sand "as deep as an index finger"--not a scientific measure, but a convincing one--has been discovered in 23 of the flatcars inspected.

Thus "Promzheldortrans" has not been able thus far to cope with its basic task--reduction of cars' layover time on enterprises' sidings, and in individual months the layovers exceed the normative periods of time by one and a half times as much. Freight is being shipped and delivered with schedule violations from the stations.

It seems that recently changes for the better have taken place at individual industrial rail transport enterprises. But to be frank, the positive steps are explained to a large extent by the fact that a considerable part of their responsibilities have been assumed by client-enterprises. Ones such as the Combine of Thin and Technical-Grade Cloth imeni Telman, the "Bumaga" Association, and the ZhBI-5 plant [reinforced concrete products plant No 5] of the "Barrikada" Association. Car layovers on their sidings have been reduced significantly.

The work of the Leningrad-Ladoga Industrial Rail Transport Enterprise also is being performed partly by the planning and construction association for large-panel housing construction of the DSK-2 [housing construction combine No 2] in the "Parnas" industrial zone.

"As long ago as January we organized an 'initiative group' of three persons which every day--both on workdays and holidays--handles the unloading of cars coming to us," M. N. Varnavitskiy, the chief dispatcher, said. "One of the engineers or managers of our enterprise also is on duty with them. Of course,



it is not so simple to tear skilled personnel away from the workplace and compel them to perform the work of freight handlers. It is an emergency measure, but we have reduced the excessive layover of cars to zero over the past months."

The clients' striving to help the work of the "Promzheldortrans" is understandable: in the final analysis, disruption of the shipment plan hits them themselves. "Promzheldortrans" is insured by "preferential" points in the agreement, which regulates the interrelation of workers in associated fields. For example, in accordance with it, enterprises are obliged to allocate persons to assist the PPZhT in two cases: when a frozen shipment arrives or the number of cars to be unloaded exceeds the norm. And if such assistance is not rendered, the PPZhT simply writes off the entire fine to the consignees without their consent.

"When there are excessive layovers permitted through the fault of the PPZhT," V. F. Kuznetsov, deputy of the ZhBI-5 plant of the "Barrikada" Association, said, "its representatives, as a measure of imposing fines by the Neva station, frequently predate the records of cars' delivery and cleaning. On the basis of them, the PPZhT takes money from the enterprises without prior consent. And we have to apply for arbitration. Normative documentation is being very poorly handled at the Leningrad-Moscow PPZhT, and cases of real layover are being concealed. As a result, performance and labor discipline is poor. Not long ago, I had to call out the militia operations group, which confiscated 40 liters of wine from the freight handlers.

Under the existing situation, the work of the "Promzheldortrans" resembles endless "tug-of-war" games, where the interests of all three departments seldom coincide. Contractual obligations bind them so insecurely that it is difficult to achieve efficient cooperation, and no footholds with the aid of which implementation of these obligations could be checked are found in them. And if there is no efficient verification, there cannot be firm performance discipline, either.

It is not by chance that "Promzheldortrans" has not been able to strengthen its authority as a reliable partner in transport shipments. Today a dozen enterprises may be cited which prefer, with all their transport disorders, to do business with the railroad without the participation of a specialized intermediary organization. Obvious testimony of distrust of their partner.

The managers of "Promzheldortrans," which today includes five industrial rail transport enterprises, believe not without foundation that many troubles stem from the poor material and technical base. The obvious lack of modern freight handling facilities is making itself felt. Incidentally, this was also the sore point during the period that the association was established. In 1977 the system possessed 25 wornout locomotives and several primitive loaders. There was no maintenance base. Not much was changed for 8 years. As before, there is no place to repair diesel engines and maintain equipment. In the words of V. I. Bekh, chief engineer of the association, not one large production building was built during these years.

The period of buildup in the association was delayed too long, and the habit of waiting for outside help was firmly reinforced here. Some must repair locomotives for them, others should maintain freight handling equipment, and others must allocate persons when the plan requires. But as is well known, nothing ventured, nothing gained.

The "Intensification-90" program formulated in "Promzheldortrans" somehow provides a basis for optimism. Through the association's funds alone it is being planned to allocate 7 million rubles for new construction and funds are being allocated for mechanizing freight handling operations, which should lead to the release of workers. At present, practically the entire increase in production volume is being achieved not through increased labor productivity, but by means of increasing the number of persons.

Serious reorganization is necessary in the work of "Promzheldortrans." Until it takes place, interruptions in the transport production line will continue on "striped rails."

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CSO: 1829/287

## RAIL SYSTEMS

### PROPOSALS FOR REDUCING DEMURRAGE OF EMPTY RAILCARS

Moscow PRAVDA in Russian 8 Aug 85 p 3

[Article by S. Aparov, member of the people's control group for traffic service on the South Urals Railroad, Chelyabinsk: "Rest Time Has Been Protracted for Railcars"]

[Text] "Shipment of product being disrupted, accelerate supply of railcars!"--the stream of letters and telegrams with such a request to the administration of the South Urals Railroad is constantly growing. During just the several months of this year, consumers have not received hundreds of thousands of tons of diverse cargos due to the shortage of empty cars. I have heard that the situation with railcar supply is no better on the other lines.

It is no secret to anyone that there is a shortage of transport facilities and that this problem will not be solved at a single stroke. That means that the existing railcar fleet must be utilized more efficiently. Are there reserves there? I would say there are, and huge ones at that! Moreover, no special expenditures are required to put them into service, and in most cases, state funds are not necessary.

We are speaking of departmental transport, the so-called "revolving stock" [Russian 'vertushki'] assigned to enterprises. In recent years, this form of transport has grown incredibly, and continues to increase. About 5,000 gondola cars, flatcars and dumpcars have been allotted just to enterprises and organizations which are attracted to use our South Urals mainline to satisfy their production requirements. And how are they being used?

Let us take the thermal electric power stations of the "Chelyabenergo" system. For internal coal shipments, they maintain more than 100 gondola cars, the majority of which are being used as designated only 2-3 months out of the year. The remainder of the time they are tied "at the hitching post" with timber, bricks and salt.

If one were to form permanent components from them for year-around delivery of fuel from local mines, as this has been proposed more than once to managers of "Chelyabenergo," it would be possible to make do with a significantly lesser quantity of railcars, and transport many hundreds of thousands of tons of other goods for the national economy with the cars which are freed up every year.

The Chelyabinsk Forging and Pressing Plant and the Ural Auto Plant have in circulation on cooperative spurs some 67 cars designated for transporting auto parts and hardware. On the average, they are being unloaded and loaded for a week each time, and some even longer, up to 15-20 days. And this is given a standard set in hours and minutes by the MPS [Ministry of Railroads]! By the way, there are yet more surprising "records." This same auto plant rents several "revolving cars" to deliver molding sand from pits within 120-140 kilometers overall. In essence, these cars have been converted into true warehouses on wheels -- on the day of our inspection, some of them had been standing without being unloaded some 40-45 days.

Meanwhile, the supervisors and workers of the enterprises which were mentioned constantly complain about the shortage of empty cars for shipping their product. When they are reminded that first they have to accelerate the turn-around time for the "revolving cars" assigned to them, there follows astonishment in response: they are ours, our own, they say, and we use them as we wish, although it is known that these transport facilities belong to the state just as much as does the entire MPS railcar pool.

Departmental cars stand idle for a long time at the Chelyabinsk and Orskokhalilovskiy Metalurgical Combines and at other enterprises. Or there is this example. Recently the USSR Deputy Minister of Rural Construction N. Nikiforovskiy approached the Ministry of Railways with a request to deliver on loan to the Novotroitskiy Plant for Reinforced Concrete Articles of the "Orenburg-elevatorstroy" Trust an additional 10 flatcars to deliver freight to the Kuybyshev Railroad. We grew interested: how were the cars allotted to the enterprise for this purpose being used? It turned out that matters couldn't be worse -- the cars were standing idle for days or "hauling air" for hundreds of kilometers.

Why does such a situation arise? There is one reason -- no one bears any responsibility for the efficiency with which departmental railcars are utilized, there is no possible control over it, either on the part of enterprise supervisors or rail transport workers.

By the way, this has already been spoken of in PRAVDA in due course. In a note [entitled] "The Cars Are Resting," Deputy Minister of Railways V. Butko responded that the existing order does not promote increasing freight shipments and that it must be changed, for which, he says, appropriate measures are being taken. But, as we have seen, the matter has not moved off center.

At the April (1985) Plenum of the CPSU Central Committee and at a conference in the CPSU Central Committee on questions of accelerating scientific and technical progress, supervisors who try to beat the government out of a few more material and technical resources but act irresponsibly with regard to their efficient utilization were subjects of criticism. Does this not have a direct connection with those who drag railcars around among the state corn bins?

It seems there is one way out here. It is time to develop general rules for the employ of rolling stock, to leave only the so-called industrial cars for enterprises and take all the rest under control of the Ministry of Railways. The government can only win from this.

9194

CSO: 1829/8

RAIL SYSTEMS

MEASURES TO IMPROVE MAINTENANCE OF WAY FOR COMING WINTER

Moscow GUDOK in Russian 18 Aug 85 p 2

[Article: "Winter Will Make Stern Demands"]

[Text] A considerable part of the losses in freight shipments which rail transport bore last winter lies on the conscience of track workers. And more than half of the wrecks which were allowed was also because of them. This is why the Collegium of the Ministry [of Railways] discussed how to prepare the track service for work during the forthcoming winter 'last Thursday.' What measures are being taken to increase the safety of train traffic?

The main elements of preparation are well known: track repair, elimination of all kinds of troubles and the warnings to reduce speed which were associated with them, repair of snow removal equipment and snow retaining structures, instructing people and preparation of the station grounds and the track runs for the operation of snow removers.

And it turned out that there is nothing special to brag about in this regard. It is true that the plan for average and for lifting track repair work throughout the network as a whole has been over-fulfilled. What has been accomplished during a "window" of one hour today is greater by 7.7 percent as compared with the corresponding period of last year, and the number of warnings was reduced by 5.6 percent in July. But this, if you please, is all.

The quota for seven months for major track overhaul was not realized. And no small part of the blame for this goes to the Odessa, Southern, Central Asian, Lvov, Volga, Northern, South Urals, West Siberian, Transbaykal and Kemerovo Railroads. It is particularly that those who are located beyond the Urals are lagging behind, for there winter can come in a month/month and a half. So fulfillment of the plan is being threatened.

Poor preparation for working during the "windows" is also hindering matters, and this shows up in what is accomplished and the quality of the work, and it also leads to the track workers not clearing their tools away during the time allotted to it, complicating train operation. Here we again have to name the Volga, Odessa, Southern, South Ural, Central Asian and Baltic Railroads, and for poor quality we add the Moscow and Far Eastern Railroads.

Continuous track maintenance is the second constituent of a guaranty of successful operation in the winter. And although the point-scale rating for the network as a whole, as we mentioned before, is lower, and the number of warning devices is less, on August 1, there were still 1400 of them in force, and the amount of track in unsatisfactory condition exceeded 6,500 kilometers. The largest amounts were on the Moscow Railroad (755 kilometers) and the Volga Railroad (629 kilometers).

It is not only the track workers who are guilty of the large number of speed reduction warnings. More than 60 percent of the warnings are caused by worn-out switches and cross-tracks. And the plants of TsTVR [expansion unknown] have underproduced by 1,260 units over seven months. The situation whereby on lines where R-65 rail is in place it is necessary to install R-50 switches gives rise to much fair but unfavorable criticism of track workers. The transitional joints are an extremely weak spot in the track.

Last winter almost half of the snow removers broke down during the first week of operation because of state of clutter around the stations. It would seem we would learn something. However even today at such major stations as Orekhovo-Zuyevo and Lyublino of the Moscow Railroad, Penza-3 of the Kuybyshev Railroad and Khovrino of the October Railroad they have not cleaned up the unneeded stuff from between the tracks.

GUDDOK recently reported the situation with regard to snow removal equipment repair, but it is being corrected slowly. Snow removers and snow plows are being repaired worse than last year in the locomotive and railcar depots of the Donetsk, Kuybyshev, Moscow, Volga, Northern and Southeastern Railroads.

They are lagging behind schedule for repairing electric revolving snowplows at the Novosibirsk ERZ [Electric Locomotive Repair Plant], for snow removal machinery at the Orenburg TRZ [Diesel Locomotive Repair Plant] and the Vereshchagino and Sverdlovsk PRMZ [expansion unknown]. Snow fences and snow retaining walls are being slowly built and repaired on the West Kazakhstan, Tselin and South Urals Railroads.

Many have spoken about revolving snowplows. Now is the time to worry about not only concluding their repair as quickly as possible but to have locomotives hooked up behind them, otherwise, as last years experience showed, the rotor will go out on the line only 2-3 hours after an order has gone out for them.

Things are far from satisfactory with the provisions for track inspection. The Dnepropetrovsk Electro-mechanical Plant of the Main Administration of Communications has disrupted the plan for flaw detectors: of 130 units, they have delivered only 20. And more flaw detector cars are needed.

The Collegium has decreed that the requisite supplemental measures be taken to insure timely completion of operations which guarantee the continuous and safe operation of the track service during the forthcoming winter. Raise the responsibility of MPS [Ministry of Railways] and track section supervisors for efficient utilization of "windows."



It has been resolved to conduct a commission inspection of tracks and structures during September and October. Organize the rapid elimination of detected shortcomings, having paid particular attention to those kilometers of track which have been unsatisfactorily maintained.

It is recommended that the rails be examined more often and more carefully using flaw detection. The Collegium has required that all snow removal equipment and snow retention facilities be repaired by the established deadlines.

The heads of the appropriate main administrations have been commissioned to make the necessary allocations and to insure delivery of switches (primarily R-65), the required quantities of spare parts, fuel and lubricants and other materials. The heads of the railroads are to hook up locomotives with permanent brigades to the rotary and other types of showplows and to make an inspection of the readiness of large units and stations in October.

The Collegium has made the supervisory workers of the Volga, Odessa, South Urals, Southeastern, Krasnoyarsk and several other railroads strictly accountable for poor management of the track service and for shortcomings allowed in the preparations for winter.

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CSL: 1829/8

## RAIL SYSTEMS

### RAILWAYS COLLEGIUM ACTS TO IMPROVE LOCOMOTIVE SECTOR WORK

Moscow GUDOK in Russian 19 Sep 85 p 2

[Article: "Take Last Winter's Lessons into Consideration"]

[Text] The Collegium of the Ministry of Railways examined the course of preparations of the locomotive service for reliable winter operation and for providing for the growing volume of shipments. It was noted that the Main Administration of Locomotives and the lines are taking a set of measures in preparation for winter and improving the maintenance and operation of the locomotive fleet to provide for the established shipment volumes.

Along with this, there exist serious shortcomings in the maintenance of diesel and electric locomotives, the organization of their utilization and preparation of their services for winter. The percentage of unrepaired locomotives exceeds the norms. The standards for diesel locomotive maintenance within the freight traffic fleet in use are not being met on a number of lines. Locomotive idle time in repair is great, there are many instances of damage en route and expense for unplanned repairs. The increase in violation of rail traffic signals, train break-up and derailments is alarming.

It is completely unacceptable that in the current year, including in the second quarter, the work time of locomotive crews was used more poorly in comparison with the corresponding period of last year. There are shortcomings in the organization of their feeding. The cafeterias of a number of depots and brigade rest homes do not meet sanitary engineering standards and buildings and equipment are not repaired in timely fashion and the repairs are of poor quality.

Timely re-examination of out-dated norms for labor costs is not provided and brigade forms of labor organization and stimulation are being incorporated slowly. On the lines, inadequate attention is being paid to mechanization and automation of labor-intensive processes, application of diagnostic techniques, incorporation of advanced technology and the top-level experience, improving the quality of repairs and the reduction, on this basis, of break-downs in the operation of tractive rolling stock.

The Collegium of the Ministry of Railways has affirmed a set of measures directed toward a fundamental improvement in the operation of the locomotive service. It has been proposed to the administrators of the Main Administration

of Locomotives that they take decisive measures to eliminate shortcomings in the maintenance and . operation of the locomotive fleet, an all-out increase in the working reliability and efficiency of locomotive utilization, improvement in the organization of the work and rest periods of the brigades. It is necessary to incorporate advanced technology and top-level experience more decisively, more energetically, to strengthen discipline and prepare the facilities and cadres for steady work during the winter period.

Individual managers of main administrations for traffic and of the locomotive service and workers on certain lines have had disciplinary proceedings instituted against them for the unsatisfactory utilization of the work time of locomotive brigades, and for not taking steps to eliminate violations of their work schedule.

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## RAIL SYSTEMS

### BRIEFS

**AKTOGAY-SAYAK LINE OPENS--**Alma-Ata--A new 180-kilometer main line, which has connected the Aktogay station with Sayak, has shortened by almost 1,000 kilometers rail transport from eastern to central Kazakhstan. [By V. Yelufimov] [Text] [Moscow SELSKAYA ZHIZN in Russian 4 Aug 85 p 1] 12805/13046

**KRASNOYARSK RAIL STATION RENAMED CHERNENKO--**The Sharypovo station on Krasnoyarsk line has been renamed Chernenko station. [Text] [Moscow GUDOK in Russian 13 Aug 85 p 2] 12805/13046

**DZHIZAK STATIONS CONSOLIDATED--**The Dzhizak and Dzhizak-2 stations have been consolidated into one station Dzhizak (code 78890) located at the site of the current Dzhizak station. It is open for business in accordance with Code "L," paragraphs 1,2,3,4,5 of Tariff Manual No 4. [Text] [Moscow GUDOK in Russian 13 Aug 85 p 2] 12805/13046

**URALS INSTITUTE HONORED--**The Urals Electromechanics Institute for Rail Transport Engineers has been named after Yakov Mikhaylovich Sverdlov. Henceforth, this higher education institution will be called the Urals Electromechanics Institute for Rail Transport Engineers imeni Ya. M. Sverdlov. [Text] [Moscow GUDOK in Russian 13 Aug 85 p 2] 12805/13046

**CHERUSTI-KAZAN-DRUZHININO ELECTRIFICATION--**The leaders of the Main Administration of the Ministry of Railways (MPS) and of the Gorkiy line have been charged jointly with the Ministry of Transport Construction to develop measures to complete all work connected with the section electrification and with strengthening of the freight and traffic handling capacity of the Cherusti-Kazan-Druzhinino route. An accelerated opening of the final section of the Sergach-Sviyazhsk electrification is envisaged in order to increase the size and speed of trains on the entire line from Moscow to Sverdlovsk. Stations and locomotive and car management will have to be developed, apartment houses and community infrastructure will have to be built. Such major stations as Murom, Agryz, and Druzhinino will also be further developed. Attention was directed towards the importance of regularly leaving "windows" for the installation of an overhead contact system at stations and on open line, and for quickly equipping the next project to be activated on the Yanaul-Yudino and Cherusti-Sergach sections. [Text] [Moscow GUDOK in Russian 13 Aug 85 p 2] 12805/13046

**RTISHCHEVO DIVISION TRANSFERRED**--The Rtishchevo division of the Privolzhskaya line has been transferred to the Southeastern line. The boundaries between the aforementioned lines have been established for the Volga line at the Ilmen station inclusively and the Duplyatka, Morozovskaya, and Blagodatka stations exclusively. The boundary between the Southeastern and Kuybyshev Railroads has been established at the Krivozerovka station inclusively for the Southeastern line. [Text] [Moscow GUDOK in Russian 22 Aug 85 p 2] 12805/13046

**NEW MOSCOW RR PASSENGER STOP**--The new passenger stop on the Moscow-Butyrskaya-Beskudnikovo section of the Moscow railroad is to be named Timiryazevskaya (code 20406). The distance from the Timiryazevskaya stop to the Moscow-Butyrskaya station is 3 kilometers, and to the Beskudnikovo station is 7 kilometers. [Text] [Moscow GUDOK in Russian 22 Aug 85 p 2] 12805/13046

**DELIVERIES TO EKIBASTUZ ACCELERATED**--Ekibastuz (Pavlodar Oblast)--Freight delivery to the Ekibastuz GRES-1 and GRES-2 has been accelerated. The laying and electrification of approach tracks made it possible to increase the freight volume of coal, equipment, and construction material for the power plants. The new line is open to regular rail traffic. By means of intensified freight haulage, several hundred cars and 10 locomotives are freed up every 24 hours. They are sent to transport Ekibastuz coal over different routes. Fuel is now delivered to GRES-1 only by heavy freight trains. This has already made it possible to create a reliable reserve of raw material at the power plant's warehouses to assure steady operation in winter conditions. [Text] [Moscow SELSKAYA ZHIZN in Russian 28 Aug 85 p 1] 12805/13046

**CHELYABINSK METRO SYSTEM DESIGNED**--The Metrogiprotrans Institute has developed plans for a future subway in Chelyabinsk. Construction has been given the go-ahead. The first phase of the metro, the building of which is scheduled to begin in 1990, will consist of nine stations and open line with a length of 12 kilometers. The subway line will connect a tractor plant with the big new Chelyabinsk housing project, Severo-Zapadnyy [Northwest]. In the future the metro will connect a pipe rolling mill and a metallurgy combine with large housing development sites, uniting all seven city regions into a single transportation network. In the time remaining before the beginning of construction, the design of the metro will be completed, the materials and equipment base established, and subway construction personnel trained. [By V. Kolobov, Chelyabinsk] [Text] [Moscow GUDOK in Russian 4 Sep 85 p 3] 12805/13046

**TWO MOSCOW METRO STATIONS OPENED**--The Zhdanovsko-Krasnopresnenskaya metro line from Planernaya station to Zhdanovskaya station in Moscow has held the top slot with regard to length. But now it has yielded first place to the Gorkovsko-Zamoskvoretskaya metro line which stretches all the way across the capital from the north--the Rechnoy station--to the southeast--the blocks of Orekhovo-Borisovo. Its length has reached 37 km with the commencement of service on the second phase of the Zamoskvoretskiy spoke from the Orekhovo station to the Krasnogvardeyskaya station. Yesterday, on the eve of the line's start-up, a mass meeting dedicated to the opening

of service along the new section of track took place at the Krasnogvardeyskaya station. The new metro stations Domodedovskaya and Krasnogvardeyskaya met the first passengers with bright lights. Clothed in light marble, the Domodedovskaya station, located at the intersection of Kashirskoye Shosse and Orekhovyy Boulevard, seems especially spacious. The design of the Krasnogvardeyskaya station is simple and severe. Wide and single-domed, it is built at the intersection of Musy Dzhali Street and Orekhovyy Boulevard with exits on Yasenevaya, Voronezhskaya, Yeletskaya, and Kustanayskaya Streets. [By N. Korshunova] [Excerpts] [Moscow PRAVDA in Russian 7 Sep 85 p 2] 12805/13046

PERSONNEL MAIN ADMINISTRATION CREATED--To strengthen the management and increase the responsibility for the selection, placement, and training of personnel in rail transport, the Ministry of Railways Administration has been reorganized into the Main Administration of Personnel. [Text] [Moscow GUDOK in Russian 10 Sep 85 p 2] 12805/13046

NEW MOSCOW RR STATION--The Vezhenka branch line on the Moscow railroad is being upgraded to the category of an overtaking station (code 22380) and is being opened for the receiving and dispatching of freight by full and partial carloads, whole cars only on the approach tracks and sites not in general use, per paragraph No 3 of the Tariff Manual No 4 of the Ministry of Transportation. [Text] [Moscow GUDOK in Russian 10 Sep 85 p 2] 12805/13046

LVOV RR PASSENGER STOP--The new passenger stop on the Sarny-Kovel section of the Lvov line has been named Ukhovetsk (code 37236). The distance from the Ukhovetsk passenger stop is 19 km to the Kovel station and 123 km to the Sarny station. [Text] [Moscow GUDOK in Russian 10 Sep 85 p 2] 12805/13046

NEW TASHKENT TERMINAL OPEN--Taskent, 11 Sep (TASS)--The Bukhara train, running from the capital to Zarafshanskaya valley, was dispatched today for the first time from the new Tashkent terminal. The routes of all south-bound passenger trains will now originate here. This city of two million has received a second terminal. For the last several years the largest transportation hub in Central Asia operated with interruptions: tens of passenger trains hampered movement on the main track. During the last two years about 20 stations have been reconstructed on the Sredneaziatskaya line. The line's passenger volume on the whole increased by 15 percent over a five-year period. [Text] [Moscow GUDOK in Russian 12 Sep 85 p 1] 12805/13046

NEW ALMA-ATA RR STATION--The Zhalanashkol station on the Alma-Atinskaya line is open for the receipt and dispatch of freight by full and partial carloads, whole cars only on approach tracks and areas not in general use, per Paragraph 3 of Tariff Manual No 4. The Zhalanashkol station has been assigned the code 75310. [Text] [Moscow GUDOK in Russian 19 Sep 85 p 2] 12805/13046

TRANSCAUCASIAN LIYA RR STATION OPENED--The new station located on the Ingiri-Dzhvari section of the Transcaucasian line has been named Liya (code 61250).

The distances from Liya station to transit points are 120 km to Sukhimi and 65 km to Tskhakaya. [Text] [Moscow GUDOK in Russian 19 Sep 85 p 2] 12805/13046

TRANSCAUCASIAN'S TETRI-TSKARO STATION OPENS--The Tetri-Tskaro station on the Transcaucasian line is open for receipt and dispatch of freight by full and partial carloads, whole cars only on spur tracks and places not in general use. The Tetri-Tskaro station has been given the code 60430. [Text] [Moscow GUDOK in Russian 19 Sep 85 p 2] 12805/13046

CSO: 1829/12



## MARITIME AND RIVER FLEETS

### SHIPYARD DIRECTORS ON RECENT SHIPBUILDING DEVELOPMENTS

Moscow IZVESTIYA in Russian 25 Aug 85 p 1

[Interviews with shipyard directors by IZVESTIYA editorial staff, reported by V. Krokhin: "Seven Feet Under the Keel!"]

[Text] An event which marked the beginning of Soviet shipbuilding took place 6 decades ago in the city on the Neva: the first four seagoing timber carriers were begun at the Baltic yard in 1925 to the music of an orchestra. Soon after at the Northern Shipyard (now the Shipyard imeni A. A. Zhdanov), construction of two cargo and passenger vessels, as they were called then, was begun for the Leningrad-London line. Since then the traditional parting words "Seven feet under the keel!" are heard from year to year at Soviet shipyards.

As of 1 January 1985, the country's maritime fleet consisted of 7,658 vessels which can take on board more than 24 million tons of cargo. What is new in domestic shipbuilding? The directors of leading shipyards respond to our question.

V. Yemelyanov, director of the Leningrad Shipyard imeni A. A. Zhdanov, is on the telephone.

"We are now shifting to building more powerful ships with the horizontal method of cargo handling--ro/ro ships," says Vladimir Aleksandrovich. "They meet all the requirements of international standards. Note that at the same time we will be conducting the technical preparation for production with wider application of computers. This means that the duration of the technological cycle will be shortened. No less important is the fact that the engineers' work will become more creative..."

[Question] We know that restoration of the "Aurora" also is in the shipyard's program...

[Answer] It is proceeding strictly according to schedule. In 1987, exactly on time, the legendary cruiser will take its permanent place at the Neva embankment. We will return the ship's appearance to the times of the revolution.

We are telephoning N. Chanturiya, director of the Okean Shipyard in Nikolayev.

"Quite recently we turned over the 'Antarktida,' a trawler of the fish canning type," Nodariy Viktorovich responds. "This was the first such specialized vessel to be developed in domestic shipbuilding or in the world. And now dockside trials of another series vessel of a similar type are under way. We will turn it over for operation in September, 3 months ahead of schedule. We also are building the country's largest ore carriers. Each one has a cargo capacity of over 50,000 tons. In the future we will be fitting out the series of these ships with more economical engines which will consume up to 30 percent less fuel. In the near future we will be perfecting construction of container carriers with the horizontal method of cargo handling and fish-processing bases for the Far East..."

The editorial staff is calling Tyumen, the director of the shipyard, P. Potapov.

[Question] Petr Petrovich, for the number of cargoes being carried, the vessels built in Tyumen--outside business competition in Siberia...

[Answer] Yes, and the role of our enterprise has increased particularly since the beginning of the rapid development of the Tyumen oil and gas region. I will not conceal that it is pleasant that under these conditions the plant's collective is not losing its stability, as they say. We have fulfilled the plan and socialist pledges for 4 years of the five-year plan in all indicators. We will deliver several barges above the plan. I will note that not one complaint has been made about our product for the third consecutive five-year plan...

Kerch is on the line. N. Volkov, director of the Zaliv Shipyard, is answering us.

[Question] What news do you have, Nikolay Anatolyevich?

[Answer] We turned over the series tanker "40-letye Pobedy" a month ahead of schedule. It has a double bottom and double sides. It was made so that pollution of the maritime environment is completely eliminated. The "cleanest" tanker represents the latest achievement of the Soviet shipbuilding industry. We are now preparing it for running trials. Well, the main task for the entire collective is to float out the first domestic transport lighter and container carrier with a nuclear powerplant, the "Sevmorput," ahead of schedule.

Smooth sailing!

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CSO: 1829/3

## MARITIME AND RIVER FLEETS

### PROBLEMS IN DEVELOPING AIR CUSHION PLATFORM, TOWING SHIP

Moscow VODNYI TRANSPORT in Russian 30 Jul 85 p 2

[Article under the rubric "They Reply to VODNYI TRANSPORT": "Amphibian on the Shoals"]

[Text] This was the title of an article published by VODNYI TRANSPORT on 14 February 1985. The editorial staff received a reply from V. Starostin, deputy chairman of the All-Union Association "Mortekhsudoremprom." The reply states that the air cushion platforms designed by the Leningrad TsPKB [Central Planning and Design Bureau] and built at the Layskiy SRZ [Ship Repair Yard], as well as the platforms built in Finland, were the beginning of a search for new and better means for delivering cargo to an unequipped shore in the developing regions of the North and the Far East and, as noted in the record of the meeting of the section for development and technical operation of the fleet of the NTS MMF [scientific and technical council of the Ministry of the Maritime Fleet] of 24-25 October 1984, they are suitable for the operating conditions on the whole and are more efficient compared with traditional means of roadstead unloading.

At present, the Leningrad TsPKB is continuing work to improve the seagoing air cushion platforms (MPVP), taking into account experience in operating them in the Northern and Murmansk shipping companies for their subsequent construction.

Development of a new amphibious towing ship, construction of which in the quantities needed in brief periods of time is impossible at Ministry of the Maritime Fleet enterprises because of the lack of production capacities, is a serious problem in effective utilization of the seagoing air cushion platform.

The Ministry of the Maritime Fleet considers it premature, in the absence of sufficient justification, to present a proposal to planning organs for their construction at the industrial enterprises of other departments. For this reason, the ministry's scientific and technical council has recommended to the Glavflot [Main Administration for Transportation and Operation of the Fleet and Ports] and the PVFU [expansion unknown] that quantities of the seagoing air cushion platforms and the amphibious towing ships be determined for the 12th and 13th Five-Year Plans.

After these data are received from the Glavflot and the PVFU and the possibility of building specialized facilities on a domestic basis and abroad are studied and determined, the All-Union Association "Mortekhsudoremprom" will take an active part in preparing the appropriate appeals to the Gosplan and the USSR Council of Ministers.

As far as the questions of efficient utilization of the so-called ships with air-supported caterpillar tracks in the transportation system are concerned, it is still too early to discuss this at present. Forthcoming tests will demonstrate to what extent theoretical predictions are close to practical results.

As experience has shown, the efficient application of means for roadstead unloading is possible under conditions of appropriate technical maintenance at specialized bases and with the training of skilled crews.

Specialization of existing technical maintenance bases in the shipping companies was determined during the years of the 11th Five-Year Plan.

Allocation of 2.9 million rubles is stipulated by the plan draft of capital investments for 1986-1990 to develop technical maintenance bases for just the Northern Shipping Company. In accordance with the recommendations of the aforementioned scientific and technical council of the Ministry of the Maritime Fleet, the specialization of technical maintenance bases for the seagoing air cushion platforms and amphibious towing ships will be defined more precisely for the long term, taking into account the developments being planned by the TsNIIMF [Central Scientific Research Institute of the Maritime Fleet] and "Soyuzmorniiprojekt" [probably--All-Union Oceanic Scientific Research Institute].

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CSO: 1829/3

## MARITIME AND RIVER FLEETS

### RESULTS OF MARITIME-RIVER ARCTIC TRANSLOADING EXPERIMENT

Moscow IZVESTIYA in Russian 16 Aug 85 p 6

[Article by V. Shmyganovskiy, IZVESTIYA special correspondent in Murmansk, Taz Bay, and Urengoy: "Passage Through Two Oceans"]

[Text] Tanned young men in brand-new life jackets emblazoned with "Arktika-85" in elegant light-blue overalls rose and fell in sloops on a cheerless gray sea, weaving among ice floes, joking in a typical accent recognizable anywhere:

"Do you need this adventure?"

"And don't say, 'Better to be in the northern part of Odessa than in the southern part of the Karskoye Sea.'"

Sloops were lowered into the water at the all-ship alarm. The decision to give the alarm was made by Captain-Extramaster P. Petrov. One of the best and largest ships of the Black Sea Steamship Lines, the "Professor Kostyukov," a bulk carrier, was sailing these waters for the first time, a domain which until recently had seen only medium-tonnage vessels. Having taken on a cargo of large-diameter pipe in Taranto, Italy, the "Kostyukov" and another high-powered motor vessel, the "Vladimir Gavrilov," had called at Murmansk before taking the northern sea route to the heartland of Tyumen Oblast, where they will drop anchor for the first time along the uninhabited shores of Taz Bay.

A rather daring Arctic experiment thus got under way. Its objective is the transfer here of cargo from ocean-going vessels, using shipboard facilities, to river boats. This route to Urengoy is 115 nautical miles shorter, eliminating a stretch of ocean sailing conditions. The shore shelters the crews from stormy north winds during transfer operations. The apparent simplicity of the plan offers an opportunity for providing a new impetus to the entire Arctic shipping process and to find what are commonly called reserves.

The Black Sea men first surprised the North with their boldness last year. Ships that were unprecedented in these shallow ports (215 meters long, 50,000 metric tons of deadweight) arrived at Ob Bay from Western European harbors, tied up at the yard at Novyy Port and delivered enough pipe (three ships in all) to lay almost 100 km of a gas pipeline. IZVESTIYA reported these runs, but it was thought they might be a one-time event, however impressive. And now the feat is being repeated, with some rather intricate maneuvering to get the ships to areas which many ship captains considered risky and dangerous,

refusing the "adventure." But the steamship line and the Ministry's Glavflot supported the originators of the concept, Black Sea Steamship Line's Transfer Technology Department Chief A. Shevchenko and P. Petrov, who thoroughly analyzed the idea from the point of view of navigation. They were supported on the basis of their precise economic calculations.

Soon after I boarded the bulk carrier, which looked like a whale loaded with pipe, the vessel headed for the bay's exit under the pilot's orders. We glided past an old friend, the nuclear-powered "Sibir." It did not seem so huge from the "Kostyukov's" bridge. The captain of the "Kostyukov," P. Gribonov, had just been assigned to this position, in contrast to the extramaster [Captain Petrov] and is in the Arctic for the first time. I note that he seems worried and practically never comes down from the bridge. Even Pavel Orestovich Petrov seemed to be watchful, concentrating, although he didn't really see any particular navigational difficulties. He had seen worse: when he was taking a ship in the heart of the Amazon, for instance, into the port of Manaus. They were delivering cement for the Trans-Amazon Highway. Then, from standing watch on the bridge for several days, their feet became swollen and became wooden.

On a run like ours, his experience and willingness to take responsibility are needed. Petrov was looking for the unloading point in Taz Bay. Shevchenko was checking out everything at the site and they both agreed. The bulk carrier was headed straight for its destination, aiming its massive prow at certain white fields, breaking through little jetties of ice...and accepted Arctic sailing practice.

"Look what they are advising us to do," says Petrov, handing me a wireless message from the sea operations office in Amderma. "'Drop anchor and await icebreaker.' What for? According to their data, it is foggy, but actually it is clear and sunny here where we are. Visibility is at least 15 nautical miles, so there is no reason to drop anchor and wait. We will continue on!"

Yugorskiy Shar was left behind. The offended office dryly reminds us about its right to determine ships' movements and gives a new report: "According to forecast data, shipping movements unaccompanied by an icebreaker will not be possible in the Novaya Zemlya Gulf/Ob Bay area till the second week in August." I noted that the Black Sea crew still had more than a week to go.

"Their report on conditions could have been more accurate. We don't need anything else," sighed Petrov.

Life aboard the bulk carrier went on as usual. Having gotten their first taste of the Arctic, crew members are warming up in the sauna. They are drinking tea made of several herbs by V. Kasyan, first captain's assistant, and V. Zelinskiy, the ship's doctor. The doctor had served on the "Izvestiya."

Our assistant political officer was a hard worker. A former navigator, he volunteered for watch duty in port, replacing the second assistant, who was busy receiving cargo, and he would do the hardest work on an equal footing with the other men. He decorated the recreation room with soccer posters and famous European team pennants. He played on the second league's all-star team himself.

And Vadim Viktorovich is also a tea lover. He even has a plant in his cabin, that he inherited from a Danish sailor upon acceptance of the vessel; he waters it with a mixture of tea and water. In a year, the green little thing grew into a substantial tree. Kasyan is one of the few men on board who has ever had experience with large-diameter pipe.

Everyone awaited the start of unloading with concern. Were they ready for it? Ready, indeed! A safety engineer from Odessa was here. Radio-equipped helmets had been acquired and a closed-circuit TV system had been set up. Even the sailors' boots were specially designed: they are a nonslipping type which releases the foot easily when caught. Just pull out the pin through the laces. But we knew that no technology can replace know-how. They had carried cement and grain before. But it was not easy even to walk on this high-rise metal mountain of pipe extending above the waves. There are almost 2,900 joints of pipe on board, about 20,000 metric tons.

It should be pointed out that the transfer of this pipe at sea in areas near the sites where transcontinental gas pipelines were being laid (Urengoy, Nadym, and Yamburg) is a promising and innovative feat in itself. The "Petrovskiy" and the "Zolotitsa," North Sea Line vessels, were the first boats to call at Novyy Port, which was in 1979.

Shevchenko studied Novyy Port's previous-year operations. Some 65 ships called, delivering almost 310,000 metric tons of pipe. Almost a fifth of this pipe was delivered by three Black Sea Line vessels. It would take 33 ships with the "Zolotitsa's" deadweight to carry that much pipe. In other words, a single Black Sea Line vessel equals 10 carriers, on the average. And if all these lighter-tonnage boats were released from these runs? How much other work they could be doing to supply areas in the Far North! This is something for the Ministry of the Maritime Fleet and the USSR State Committee for Material and Technical Supply to think about. It is important that all parties clearly delineate their interaction.

"By no means do we want people to talk about us in terms of heroes and great exploits," says Anatoliy Zinoviyovich. "We do not want to conquer the white silence and go into the Arctic for indefinite periods of time. We are seasonal workers, so to speak, "sea-going moonlighters," but we are undertaking something that is advantageous for the government."

"It's all quite simple," he went on. "A large ship means economy of scale: bigger deadweight translates into greater overall efficiency." Shevchenko gets his plans and charts. "Take the 'Zoya Kosmodemyanskaya,' a bulk carrier, with 50,000 metric tons deadweight. Even if it stands by for 6 days before starting to unload, it still figures out to 57 metric tons an hour, nearly twice the rate for light- and medium-weight ships. Aren't you bored? But we agree: leave the terrors of sailing, the fogs, and the exoticism for later."

Finally, we turned due east, to Ob Bay. The sun was still shining into my cabin at midnight. It almost seemed to dip below the horizon, not in the west where it was supposed to, but in the north. But it only glanced the rim of the ocean and slid back up in the sky like a ball in a slow-motion film. Our position was fixed by satellite and we followed the echo depth finder continuously. The "Kostryukov" was making good time, leaving its notorious seven



feet behind the keel, then much less. We put into Taz Bay at exactly the time Petrov had figured. For the first time, these places on Cape Chugor and Dvukh Chumov Bay were awakened by symbolic toots from such a huge vessel. Raindrops drummed on the hoods of our jackets on this clear, sunny day. "Ocean-resistant" gnats were the first to greet us in these parts.

I depart for Urengoy aboard one of the Ob-Irtysh Association's River Line vessels, the "Omskiy-6," registered in Tobolsk. River authorities assured me that we would arrive at destination in 20 hours. Capt Vladimir Baranov, 29 years old, said, "We wouldn't even begin to predict when you might get there."

He said he had taken on a little less pipe: there were shoals everywhere in Taz Bay and the Pur River. After only a few hours on the river, I marveled at the young captain's wisdom. Often there was only 15 cm of water under the keel of the boat, which was comparatively large: 106 meters long. Increase speed and you run aground. If you take on a maximum load to meet the plan or other pressures, you wound up losing more than you gain. Running aground on the shoals is common enough as it is. The Black Sea Lines allow over half a day for such delays. Boats use their own resources to get back into the water: the hull vibrates like it does when caught in ice. Sometimes one must simply wait for a northwest wind to raise the water. The seagulls, which usually follow every boat, catch fish in the muddy water. When we scrape bottom again, they land on the water nearby and rest. As the delay drags on, it seems to provoke their indignant cries and humiliating laughter.

At the very entrance to the Pur, just past Cape Nakhodka, our boat, the "Omskiy-30," ran solidly aground. They tried to help us and broke several ropes, all in vain. We continued on our way, now hugging the wild, uninhabited shores, now plunging into a narrow channel between sandy islands.

At Urengoy, the pipe was immediately loaded onto trucks. Somehow, I could no longer think about the load which we had delivered indifferently. The black fat-sided cylinders seemed to represent so much human effort, ideas and even passions!

One of my last conversations with Shevchenko and Petrov came to mind. I was expressing doubt that these behemoths could be sailed directly into Ob Bay from the east (this route was indicated by the Black Sea Lines with a dotted line).

"We will do it. We'll take the Yenisey to the Dudinka to take on ore. (It was as if Petrov were there, telling the whole story.)

I said, "That may be too much for you, Anatoly Zinovyovich." This boat is the size of two soccer fields. You'll get half-way up the river and...."

"Leave those fears to the faint-hearted romantics," countered Pavel Orestovich. "Sailors that have taken ships many times through the Bosphorus, English Channel and the Straits of Malacca won't get lost in the Far North, either. It's a help that there are not dozens of on-coming boats that you must avoid hitting.

"We'll make it through," said Shevchenko with assurance. "And it will be helpful to the government again, even if a couple of bulkers have to turn back be-

cause of the ice. Will they stretch a tow line across half the world? They are used to that. What's the harm?"

There was a new pile of papers and a hardhat on his desk. The steamship line's head technologist and the "extra master," as such captains are called all over the world in English, were supervising the first unloading not far from the gangplank. Then they drew up the paperwork together, short-spoken and efficiently. They gave me wireless messages reading, "Take all precautions" and other communications for souvenirs.

As this issue was being composed, a wireless message arrived from the "Professor Kostyukov": "Due to the efforts made by two ministries, the USSR Ministry of the Maritime Fleet and the RSFSR Ministry of the River Fleet, the experiment was a success. It is now certain that Arctic sailings will soon become commonplace. [Signed] Shevchenko. Petrov."

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RIVER FLEET'S HARVEST SUPPORT WORK REVIEWED

Moscow VODNYY TRANSPORT in Russian 31 Aug 85 p 1

[Article by V. Krayushkin: "From Field to Destination"]

[Text] The main slogan now in the country is "Bring in everything that grows," and such is the need after this rainy summer. And the river crews to whom the greatest treasure, i.e., the harvest, is entrusted have a ready-made task: "Move the harvest fast with no losses." The agricultural front is advancing rapidly. Its only limits were in the south, but they are now advancing into Kazakhstan, the Transurals and Siberia. The all-Russian truck farm, i.e., the melon and tomato fields around Astrakhan and Volgograd, are producing thousands of metric tons of watermelons and tomatoes daily for shipment.

A golden stream of this year's grain harvest flowed along the Volga, the ancient main artery for Russian grain. Water transport workers from the Dnepr, Pripyat, Dnestr and northern Kazakhstan rivers are moving the harvest. Over 1,000 boats were readied to deliver grain and vegetables smoothly along the rivers of Russia, the Ukraine, Belorussia, Kazakhstan, Moldavia and the Baltic Coast. The collectives of many river lines, those to whom our greatest wealth is entrusted, i.e., the harvest, competed in honor of the 17th CPSU Congress and supported the best Volga crews, who sent an open letter at the beginning of the harvest work to co-workers and are now serving as exemplary models of highly organized, intense labor. And this was not done in vain. Every load of vegetables and grain consigned for shipment in the first eight months of this year has been delivered.

Vessels of the RSFSR Ministry of the River Fleet alone will handle 5.3 million metric tons of wheat in the last year of the 11th Five-Year Plan, which is almost 26 percent above the previous year. Some 131,000 metric tons of tomatoes and 89,000 metric tons of watermelons will be delivered by river vessels.

The lion's share of harvest-related shipping is being done in the third quarter this year. Russian water-transport workers will handle around 2.5 million metric tons of grain, 125,000 metric tons of tomatoes and 85,000 metric tons of watermelons in the third quarter. August is ending and the third quarter is more than half over. What have water-transport workers accomplished in the last two months? Some 121,000 metric tons of tomatoes have been delivered to consumers, far above plan. The watermelon figure is lower: only 24,300 metric tons were shipped, whereas the August plan called for 42,000 metric tons. Buyers failed to come through and have let river workers down.

The August plan for grain deliveries by river vessels was not met, either. Grain buyers also let the water-transport workers down. Grain shipping was off to a slow start on nearly all rivers. Grain shipments on the Don, for example, only got under way on July 16. Grain elevators in Saratov Oblast began loading the first wheat on July 25, Volgograd threshing floors began consigning wheat to river workers for shipment in the first ten days of August and buyers in Tataria and Bashkiria began shipping only on August 15.

Even now, grain is being consigned for shipment in these areas without considering unloading capacities at the destination. Just as in previous years, specialists at the RSFSR Ministry of Procurement do not coordinate grain orders through the oblast grain administration, so smooth grain delivery to unloading facilities is not provided. Last year's errors are being repeated and they are reflected in a huge adverse impact on the river shippers' throughput capacity. In 1984, idled grain vessels piled up a million tonne-days above the plan allowance. This is the magnitude of losses incurred by river-vessel crews because someone didn't close orders in time with oblast grain administration officials and others didn't explain the actual situation at threshing floors and riverside grain elevators.

Unfortunately, this year's losses are already considerable. Due to the muddled organization of commercial enterprises in Moscow, Kazan and Cheboksar, river vessels delivering tomatoes to these cities in the second half of August experienced lengthy unloading delays.

But river boat downtime was also due to poor readiness of the vessels to ship this year's harvest. Sectorial personnel at the Ministry of the River Fleet received complaints from buyers and national inspectors about the poor quality of boat repair. The 835 vessels assigned to move the harvest probably included tens of poorly repaired motor vessels with serious defects, and this all came to light when these vessels were placed in service. They had to be replaced fast. Hours were lost in reassigning, cleaning up and washing out these vessels.

A number of basic problems in peak harvest-time shipping still must be resolved in order to improve the transportation of agricultural commodities. Specialists at the RSFSR Ministry of the Fruit and Vegetable Industry, the RSFSR Ministry of Agriculture and Rospotrebyuz must now work out and put into practice a series of measures on loading river vessels in strict compliance with technical specifications. Loading and unloading of vessels carrying watermelons or tomatoes must be organized on a 24-hour basis. Dispatchers' daily and 10-day requests must be closely respected, i.e., vessel availability planning must be improved.

In every way possible, river workers must improve traffic schedules of vessels transporting the harvest, carefully monitor their movements and not allow their own lack of organization or poor scheduling to delay these vessels for a single minute.

Another point must absolutely be mentioned: fall has arrived. Vegetables, potatoes, fruit and other produce high in vitamins will soon be put in long-term

storage. Well-managed departments are already getting warehouses, refrigerated storage facilities and vegetable storehouses in order.

But these preparations are not being made everywhere. And this means that field crops, which are produced with such toil and consigned on time to river workers, will spoil before reaching stores and dining halls. In the light of today's complex buying and shipping conditions for vegetables and potatoes, Glavurs management in the Ministry of River Shipping must pay even closer attention to setting up a modern base for fruit and vegetable storage.

There is still time. Before the large-scale influx of fruit and vegetables begins, everything can be put in order: warehouse repairs can be effected and work on new facilities can be accelerated.

The harvest is under way. The nation's river workers see it as their solemn patriotic duty to step up the pace of grain and vegetable deliveries and to take a more active part in the nationwide campaign to put the Food Program into effect. In a word, every effort must be made to meet the task this quarter and get this year's harvest into safe storage.

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## MARITIME AND RIVER FLEETS

### SMALL UNIVERSAL CARGO SHIP FOR ARCTIC COASTAL WORK

Moscow VODNYI TRANSPORT in Russian 22 Aug 85 p 3

[Article by Leningrad correspondent S. Mikhalev: "A Ship Comes Out on the Shore"]

[Text] Designers of the Leningrad TsPKB [Central Planning and Design Bureau] of the Ministry of the Maritime Fleet have developed a plan for a new diesel vessel for the Arctic coast--a plan for a diesel ship-platform. A shallow draft, small dimensions (length 45 meters, beam about 9 meters), as well as good maneuverability and the capability of mooring at unequipped piers enable the ship to deliver cargo on small rivers in the most remote regions of the Far North.

The vessel also has one peculiarity. Imagine this picture: vehicles, tractors and other machinery come off lowered bow and side ramps under their own power, and the ship's crane brings commodities, railroad containers and spare parts out of the holds. And the ship at this time is located right on...the shore.

"The ship was designed so that it will be able to remain on dry land during ebb tides," Vladimir Aleksandrovich Vladimirtsev, chief designer of the Leningrad TsPKB, says of his creation. "During a flood tide the vessel approaches a place selected beforehand and drops anchor, but when the water recedes, it stays in the same place, ready for unloading."

The designers were concerned about the crew as well, of course. They designed a diesel generator in the ship's bow, significantly reducing the noise. After a work day in the severe Arctic weather, the sailors off duty will be able to rest in comfortable cabins for two and warm themselves in a sauna...

The collective of the "Krasnaya Kuznitsa" Ship Repair Yard in Arkhangelsk has already begun construction of the first diesel vessel in the new series for the Arctic coast.

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BRIEFS

NEW REEFER FOR LATVIA--(LATINFORM)--The new Soviet refrigerator ship "Camilo Cienfuegos" has tied up at the Ventspils port docks. The ship, which bears the name of a national hero of the Island of Freedom and one of the leaders of Cuba's rebel revolutionary army, is the first motor vessel to replenish the refrigerator flotilla of the Latvian Shipping Company this year. Built to order for the Soviet Union by the shipbuilders of fraternal Poland, it can carry up to 6,000 tons of foodstuffs. The refrigerator ship "Camilo Cienfuegos" will ply the transatlantic maritime route linking European ports with Cuba and other Latin American countries. The crew of the new fruit freighter has decided to enroll members of the team of C. Cienfuegos in perpetuity. [Text] [Riga SOVETSKAYA LATVIYA in Russian 14 May 85 p 2] 8936

NEW GEORGIAN TANKER NAMED--(GRUZINFORM)--By decision of the USSR Ministry of the Maritime Fleet, one of the new tankers registered to the Georgian Shipping Company has been named after the eminent Soviet writer and Lenin Prize laureate Nodar Dumbadze. Henceforth, the writer's name will shine on the side of the ship. The vessel, which has a displacement of 25,000 tons, will begin making long-range cargo voyages. [Text] [Tbilisi ZARYA VOSTOKA in Russian 14 May 1985 p 3] 8936

GOROKHOVETS YARD LAUNCHES TUG--Gorokhovets, Vladimir Oblast--The seagoing tug "Verman" has left the berths of the Gorokhovets Shipyard by way of the Klyazma River for the shores of the White Sea. The ship, one of a new series, has been transferred to the customer a month earlier than the dates planned. "At first glance, a simple maneuver helped to speed up the construction schedule," said the shipyard director, A. Perepelkin. "The point is that it is possible to perform the final alinement of the main engines only when the vessel is afloat. We don't have open water earlier than the middle of April. For this reason, it was decided to break the ice and launch the ship when it was still winter. The shipbuilders gained time by this maneuver." The speedup enables the customers to bring the tug to the port of registry ahead of time. A special dock to transport a seagoing vessel on the customarily shallow Klyazma River is not necessary, either; this significantly reduces fuel consumption and labor input. After all, it will now sail in deep water under its own propulsion. [Text] [Moscow SELSKAYA ZHIZN in Russian 15 May 85 p 1] 8936

**AZERBAIJAN-KAZAKHSTAN FERRY SERVICE--(AZERINFORM)--**A ferry linking Azerbaijan and Kazakhstan has been inaugurated on the Caspian Sea. The cargo and passenger ferryboat "Sovetskiy Kazakhstan" left for the first time on its new route to the port of Aktau. "Opening of the new ferry line," T. Akhmedov, deputy chief of the Caspian Shipping Company, told an AZERINFORM correspondent, "has become necessary in connection with the increased volume of cargo shipments between republics in the Caucasus and Central Asia. More and more petroleum products and electric items--air conditioners and electric motors--are leaving Baku for Kazakhstan. Agricultural equipment, metal products and fertilizers are coming to the Caucasus from Western Siberia and Kazakhstan. The Baku-Krasnovodsk ferry, the first one in the USSR which has been operating for over 20 years now, shipped several million tons of cargo last year; it has been having difficulty handling the ever-increasing volume of freight." At the same time that preparations were made to open the new route, the ferryboat fleet was being replenished. The ships "Sovetskiy Dagestan" and "Sovetskiy Tajikistan" have arrived on the Caspian. This year residents of the Caspian Sea region will receive three more ferryboats--the "Sovetskaya Gruzziya," "Sovetskaya Armeniya" and "Sovetskaya Kalmykiya." Construction of them is being completed at the shipyard in the Romanian city of (Pula). These ferryboats will serve the new ferry line from Baku to Bekdash, scheduled for inauguration at the end of the five-year plan. [Text] [Baku VYSHKA in Russian 24 May 85 p 2] 8936

**AUSTRIAN-BUILT PASSENGER SHIP--Vienna, 25 [May]--**A celebration was held in Korneuburg, at the shipyard of the country's largest state concern, ("FEST-Alpine"), for the launching of the river passenger liner named after Soviet poet Mikhail Svetlov. This is the fifth in a series of comfortable vessels built to order for the Soviet Union. Such ships, which have a light draft, are being used for passenger routes in the Volga-Kama River system. More than 170 vessels of various types, including modern passenger motorships, tugs, dry cargo ships and barges, have been built to order for the USSR in the 30 years of collaboration between Soviet foreign trade organizations and the Linz-Korneuburg shipbuilding enterprises. [By PRAVDA correspondent B. Dubrovin] [Text] [Moscow PRAVDA in Russian 26 May 85 p 1] 8936

**URAL RIVER BARGES BUILT--(KAZTAG)--**The routes of the cargo vessels of the Ural River Shipping Company have become twice as long. Barges of the "1736" design have appeared on the Guryev-Mangyshlak and Guryev-Volga Delta lines. The Ural Ship Repair and Shipbuilding Plant imeni V. I. Chapayev has begun turning out these dry cargo vessels, which have a carrying capacity of 500 tons. The new barges are reliable both on the river and at sea. The collective of the ship repair and shipbuilding plant renovated the enterprise in a short period of time in order to put the new vessels on the ways. Most of the equipment has been replaced. A 400-ton press, a powerful unit for cutting 16-millimeter steel sheet and other machinery have been set up. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 31 May 85 p 1] 8936

**GEORGIAN TANKER IN OPERATION--Batumi--**A new vessel of the Georgian Shipping Company, the "Bolshevik Kamo," has left the port of registry on its first working voyage. The tanker, with a deadweight of 16,354 tons, is a continuation of the "J. Broz-Tito" series of ships, which are being built in



Split (SFRY). [By Yu. Gologorskiy] [Text] [Moscow VODNYI TRANSPORT in Russian 6 Jun 85 p 1] 8936

NEW DRY CARGO SHIP--Odessa--The fleet of the Black Sea Shipping Company has been augmented by one more versatile multipurpose dry cargo motor vessel, the "Kremenchug," with a deadweight of 18,000 tons; it is one of the "Astrakhan" series which is being built in Warnemunde (GDR). In addition to the same type of motorship which was received previously--the "Vinnitsa," another two will arrive before the end of the year--the "Brest" and the "Rovno." The crew of the "Kremenchug" was led by Sea Captain V. Lomakin on its first working voyage, to ports in the FRG. [By our own correspondent] [Text] [Moscow VODNYI TRANSPORT in Russian 11 Jun 85 p 1] 8936

WISMAR SHIPBUILDING FOR USSR--The red flag of the Land of the Soviets has been raised over a mother ship--a refrigerator ship of the "Kristall-2" type, built to order for the USSR by the (Matias-Tezen-Verft) shipbuilders in Wismar (GDR). The port of registry of the ship, which has been named "Bereg Vetrov," will be Kaliningrad. The purpose of ships in this series is to take on board and process the gifts of the sea provided by fisheries. Each one of these 152-meter giants has been provided with automated loading and unloading equipment and heavy-duty freezer chambers over 13,000 cubic meters in volume. The "Bereg Vetrov" is the third ship provided by the Wismar shipbuilders to their Soviet partners since the beginning of the year. By the end of the current five-year plan, they will build another five such mother ships for the USSR, as well as a number of multipurpose dry cargo vessels. The Wismar shipyard is not the only GDR shipbuilding enterprise which is filling large-volume Soviet orders. Many other seagoing and river vessels being built at Rostock, Warnemunde, Stralsund and Boizenburg have been earmarked for the USSR. It is noteworthy that the sector's output has been replenished by more than one-half as much in the current five-year plan. The collaboration by the republic's shipbuilders with their colleagues in the Soviet Union and other CEMA countries has contributed to this to a significant degree. [Text] [Moscow VODNYI TRANSPORT in Russian 18 Jun 85 p 1] 8936

CHEMICAL TANKER IN OPERATION--(TASS)--The new specialized oceangoing tanker "Yuliy Danishevskiy" has embarked on its first voyage. The vessel is named after one of the founders of the Communist Party of Latvia. The large tanker is capable of carrying 16,000 tons of liquid chemical cargo. [Text] [Moscow VODNYI TRANSPORT in Russian 18 Jun 85 p 1] 8936

HUNGARIAN-BUILT FLOATING CRANE--Budapest ship and crane builders have won an important labor victory: a type of floating crane of new design with a displacement of 35 tons built to order for the Soviet Union has been launched at the (Ganz-Danubius) plant in the capital. By 1990 the enterprise will build nearly thirty such craft, which are being used for various operations in port water areas and river beds. They have pledged to transfer the first crane to representatives of Sudoimport in the third quarter of this year. The new production for the Soviet Union is being put into operation on the basis of achievements of science and technology and the introduction of new materials and processing methods in Hungarian industry, in accordance with the long-term program for development of economic and scientific and technical collaboration between the USSR and the Hungarian People's Republic for the

period up to the year 2000. [Text] [Moscow VODNIY TRANSPORT in Russian 20 Jun 85 p 1] 8936

ESTONIAN CAR FERRY DELIVERED--Riga (TASS)--The icebreaking car-and-passenger ferry "Kharilayd" has been transferred to the customers--the sailors of Estonia. It was built by workers of the Riga Ship Repair Plant. The powerful electrically-driven motorship will serve as a year-round ferry between the island of Hiiumaa and the mainland part of the republic. It differs from icebreaking ferries of previous series by its light draft, which will enable it to go into shallow harbors. A new icebreaking ferry is on the ways. The Riga shipyard workers, in assuming shock duty in honor of the 27th CPSU Congress, have pledged to turn it over ahead of schedule. [Text] [Moscow VODNIY TRANSPORT in Russian 20 Jun 85 p 1] 8936

NAKHODKA COMPLETES 'BULAT' TUG--Vladivostok--A tug in the new "Bulat" series has been readied for launching at the Nakhodka Ship Repair Plant; it was built by the Far East shipyard workers to serve the transport lighter system. Its predecessors are operating in the ports of Nakhodka and Vladivostok, reliably performing mooring, docking and maneuvering functions. It is equipped with two powerful diesels and two control stations, and possesses good seaworthy qualities. [By correspondent A. Mikhasenko] [Text] [Moscow VODNIY TRANSPORT in Russian 20 Jun 85 p 1] 8936

NEW BULKER IN NIKOLAYEV--Odessa--A ceremony marking the raising of the USSR national flag was held on the bulk carrier "Aleksey Danchenko," one of the series of vessels of the "Khariton Greku" type being built by Nikolayev shipyard workers. The motorship was named in honor of Hero of Socialist Labor A. Danchenko, who headed the Black Sea Shipping Company for many years. The new bulker, which has a displacement of 66,000 tons, can accommodate more than 50,000 tons of bulk cargo in its eight holds. [By our correspondent] [Text] [Moscow VODNIY TRANSPORT in Russian 29 Jun 85 p 1] 8936

RO-RO DELIVERED TO LENINGRAD--Leningrad--The future of our country's maritime fleet lies with these vessels. The motorship "Astrakhan," a vessel of the "ro-ro-18" type and the leading ship in this series, has been operating for more than a year with the Baltic Shipping Company. The second ship of the same type, the "Rostov," has been plying the World Ocean for the ninth month. While there is still little experience in operating these ships, the first one provides a basis for anticipating their prospects and high economic efficiency. Now Baltic residents have received the third ship of the same type, the "Budapesht." The national flag of the USSR was raised on board this vessel on 30 April. After completing its first sea voyage from Warnemunde, where GDR shipbuilders are building these specialized vessels to order for the Soviet Union, the "Budapesht" took on large-diameter pipe for the main gas pipeline in Bremen en route, and arrived in Leningrad. This year sailors of the Baltic Shipping Company will also receive their fourth ship of this type from the GDR shipbuilders. It will be called the "Kostroma." [By correspondent V. Yeliseyev] [Text] [Moscow VODNIY TRANSPORT in Russian 29 Jun 85 p 1] 8936

CONTAINER SHIP COMPLETES TRIALS--The new motor vessel "Nikolay Yanson," which handles cargo by the level method, has completed sea trials successfully; it

was built at the Shipbuilding Plant imeni A. A. Zhdanov. Ships of this type, which have a displacement of 12,000 tons, have been awarded the state Emblem of Quality and speed up maritime shipments significantly. The time they spend at berths in port is minimal, since they do without the assistance of special equipment on shore. The shipyard collective will provide the fleet with the new container ship more than a month ahead of schedule. And the other day the next one, given the name of the hero-scout Kuzma Gnidash, was launched; building of it is being completed. Widespread development of a brigade contract and continuing introduction of organizational and technical innovations are helping the shipbuilders to speed up the pace of the "ship assembly line." The "Korpus" system of automated metal cutting, which utilizes modern computer technology and equipment, has been put into operation here. It makes it possible to provide the assembly sections and the building slip of the plant with high-grade semifinished work pieces which shape the hulls of the future seagoing motorships more quickly than with the traditional cutting methods. [From reports by PRAVDA and TASS correspondents] [Text] [Moscow PRAVDA in Russian 18 Jul 85 p 2] 8936

AUSTRIAN-BUILT VESSEL LAUNCHED--A new dry-cargo vessel has left the slips of ["Linz-Korneuburg"], Austria's largest shipyard. This is the first of four such ships being built for the USSR. It can take up to 2,000 tons of diverse cargo on board, transport containers and automobiles and push up to 5 barges. "The Soviet Union has been our chief trading partner for many years," said K. Wildt, General Director of the shipyard, in an interview with a TASS correspondent. "We have already delivered more than 180 ships of various types to the Soviet Union. Such collaboration brings great mutual benefit." [Text] [Moscow VODNYI TRANSPORT in Russian 8 AUG 85 p 1] 9194

FINNS BUILDING CRANE SHIP--"Stanislav Yudin" is the name of the crane ship which shipbuilders of the joint stock company ["Vaartsilaa"] are building in Turku on order of the Soviet Union. It is one of the largest in the world among ships of similar type. The lifting capacity of the crane is 1,600 tons. It may be used for work at a distance of up to 50 meters from the ship. The new ship is designated for various operations connected with erecting drilling towers at sea and installing oil pumping systems under difficult conditions at sea. [Text] [Moscow VODNYI TRANSPORT in Russian 8 Aug 85 p 1] 9194

NEW CONTAINER SHIP IN SERVICE--Leningrad--The ship "Professor Tovstikh," named in honor of the prominent scientist and director of the Leningrad Shipbuilding Institute, augmented the fleet of the Baltic Maritime Shipping Company. Built on Soviet order by shipbuilders of the German Democratic Republic at ["Warnow-werf"] in Warnemünde, this ship completes the series of "Kapitan Gavrilov" type container ships. The capacity of the steamship "Professor Tovstikh" is 920 foot-type containers. [By K. Markov] [Text] [Moscow VODNYI TRANSPORT in Russian 10 Aug 85 p 1] 9194

CARGO VESSEL, ICEBREAKER NAMED--our own information--The name Toyvo Vyakhya has been assigned to dry-cargo vessel #85 of project 1557, which is under construction. The name of the famous river transport worker Vasiliy Mikhaylovich Moshkin has been assigned to the new river icebreaker with construction number 473 of project R-1191. The new icebreaker will be called "Kapitan Moshkin." [Text] [Moscow VODNYI TRANSPORT in Russian 10 Aug 85 p 1] 9194

CARGO-PASSENGER RIVER VESSEL--Ust-Kut (TASS)--The first vessel of a new series, the self-propelled cargo and passenger ferry, set off on the Lena. Shipbuilders of the fleet's local repair and operations base have started producing such diesel powered vessels. The use of such boats on the small rivers of Siberia and the Far North will aid in improving transport service to villages of geological prospectors, miners, hunters and reindeer breeders. [Text] [Moscow VODNYY TRANSPORT in Russian 20 Aug 85 p 1] 9194

OIL TANKER FOR CASPIAN--Baku (TASS)--The oil tanker fleet of the Caspian Maritime Shipping Company has been augmented with a new vessel named in honor of Ulyana Gromovaya, Hero of the Soviet Union. This tanker was built in Volgograd, and it has a capacity of 4,600 tons. The vessel's shallow draft will permit it to be passed along the interior water routes as well. [Text] [Moscow VODNYY TRANSPORT in Russian 20 Aug 85 p 1] 9194

AIR CUSHION VESSEL PRODUCTION--Podporozhe, Leningrad Oblast (TASS)--Specialists of the Svirkaya Shipyard have begun series production of air cushion vessels. This equipment will serve geologists, radio operators, fishermen and gas and oil pipeline builders. [Text] [Moscow VODNYY TRANSPORT in Russian 22 Aug 85 p 1] 9194

OIL TANKER FOR LATVIANS--Riga (our own correspondent)--The oil tanker flotilla of the Latvian Shipping Company was augmented with yet another ocean-going tanker built at Yugoslavian shipyards in the city of Rijeka. The ship was given the name of the Latvian writer ["Zhan Griva"], author of striking works about sailors. It is capable of transporting both petroleum products and chemical cargos. The new tanker, the crew of which is commanded by Captain N. Grozenok, is now on course for Libya, where it will take on cargo for a port on the European continent. [Text] [Moscow VODNYY TRANSPORT in Russian 5 Sep 85 p 2] 9194

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## PORTS AND TRANSSHIPMENT CENTERS

### CONTAINER TERMINAL CONSTRUCTION BEGINS IN VANINO PORT

Moscow IZVESTIYA in Russian 13 Jul 85 p 1

[Report by IZVESTIYA correspondent B. Reznik from Khabarovsk Kray: "The Youth of an Old Port"]

[Text] Construction of a highly mechanized container terminal has begun at the port of Vanino. More than 40,000 sealed heavy metal "packages" will be dispatched from here every year to Magadan Oblast and rayons of the eastern Arctic.

"Construction of a container terminal and the second section of the ferry across the Tatarskiy Proliv is an integral part of the long-range plan for the port's renovation," V. Bykov, chief of the Vanino maritime port, said in a discussion with your correspondent.

In only 30 years the enterprise has grown from one wooden pier to the largest mechanized port in the Far East. The arrival here of freight on the Baykal-Amur Mainline has given new impetus to the development of Vanino. The Baykal-Amur Mainline required that loading and unloading operations be intensified. The port workers coped with the task. They have exceeded the sectorial norm for direct cargo transshipment by nearly twice as much. Consolidated complex self-supporting brigades led by USSR State Prize Winner N. Shantsev, S. Statsenko, bearer of the Order of Lenin, and V. Mikhaylov introduced highly productive small-scale mechanized devices developed by the enterprise's innovators. This made it possible for them to fulfill the targets for the 11th Five-Year Plan as early as the beginning of this year, and now they already are working toward the 12th Five-Year Plan.

The nature of the Vanino longshoremen's work will be changed to a large extent with the commissioning of the container terminal. The large metal container is convenient to transport and to store. Only a few hours are necessary to fill the holds of a large-capacity ship and send it on its way. They stow "loose" cargo for days.

This year the construction workers of SMP-284 [construction and installation train 284] of the Daltransstroy trust will raise the moorage wall at the container terminal and will lay the foundations under the machinery. The

first rear container reloader is now being set up here. Specialists will be adjusting the machinery's electronic and electrical systems. The container terminal will be in full operation in 3 years.

By this time the longshoremen's partners--the sailors and railroad workers--must carry out a large amount of work. The laying of track to the container terminal has begun and the fleet will be replenished with new vessels--container ships of the reinforced icebreaking type for the northern seas.

Construction of the second section of the Vanino-Kholmsk ferry will be completed this year. This route will be served by 11 powerful ferryboats. The capacity for shipping cargo to Sakhalin will be increased by 65 to 70 percent. The working people of the island oblast will be receiving practically everything necessary by the ferry.

After renovation is completed, the port of Vanino will become one of the largest and most highly mechanized in the Soviet Far East.

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## PORTS AND TRANSSHIPMENT CENTERS

### IMPROVEMENTS, EXPANSION UNDER WAY AT RENI PORT

Moscow MORSKOY FLOT in Russian No 8 Aug 85 p 16

[Article by V. Mermyanin: "New Facility at Reni"]

[Text] At the old Danube port of Reni cargo is transshipped from six socialist countries--USSR, Bulgaria, Romania, Hungary, Czechoslovakia, and Yugoslavia. Cargo from other countries along the Danube is also handled. The annual turnover of the port is 13 million tons, the largest on the river from Ismaila to Regensburg (FRG). Reni forwards cargo to 30 ports on the Black Sea and the Mediterranean. Until recently the transshipment capacity was sufficient to satisfy domestic and foreign trade needs. However, circumstances required another look at the usual standards of measurement.

Reconstruction of the port began in 1983 with the construction of a new transshipment complex by the Yugoslavian firm Generaleksport.

The Yugoslavian workers constructed four berths, warehouses, a dormitory, a dining hall, railroad spurs, support facilities, living and other accommodations. The length of berthing space has been increased by more than half a kilometer. Now the port will be able to transship an additional 800,000 tons of cargo per year.

Reni workers participated in the construction of the cargo-handling complex. They reconstructed a boiler and upgraded the port's water, heat, and electrical supplies.

Not all went smoothly during construction of the cargo-handling complex. High water in the Danube carried away sections of washed-out berths, and the fluctuating depth of the river disrupted the timely delivery from Belgrade of prefabricated components and various materials for the facility. However, these difficulties were overcome by the combined efforts of Soviet and Yugoslav seamen and construction workers.

The first phase of the new cargo-handling complex began operation on 20 December 1984. The ceremony was attended by the deputy chairman of the union executive committee of Yugoslavia, B. Srebrich, managers of the Soviet and Yugoslav organizations and departments, and workers, engineers, and technicians of the port of Reni. Those who spoke at the ceremony commented

on the indestructible friendship of the Soviet and Yugoslav peoples, exemplified by their successful work and the excellent quality demonstrated in fulfilling the objectives for the port.

At this time the ship Yuriy Krymov tied up to one of the new berths and began loading export cargo.

Reconstruction of Reni port is still not complete. Only the first phase of the complex is in operation. An agreement has been reached for the construction of the second phase. This will make it possible to extend the berths by another 650 meters and to increase the cargo handling of the port by a million tons a year.

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## PORTS AND TRANSSHIPMENT CENTERS

### RAIL SECTOR FAULTS CAR DEMURRAGE IN BLACK SEA PORTS

Moscow GUDOK in Russian 27 Aug 85 p 1

[Article by GUDOK correspondent M. Gorbis and Ya. Sadvari, editor of the newspaper ILICHEVETS, from Odessa, Ilichevsk and Yuzhnyy: "They're Waiting by the Sea for the Weather..."]

[Text] The selectors' conference was coming to an end in the Odessa maritime port. Managers of the freight handling regions [pogruzrayony] reported on the work completed and their plans for the following days. The impression was created that everything is proceeding well. But V. Shokotko, chief of the Odessa-Port station, was upset by the apparent success.

"When will the port workers unload as they should?" he asked in an agitated voice. "Railway cars with cement have been standing idle for days now."

"Unfortunately, we don't have the opportunity to speed up their unloading now," responded A. Serik, deputy chief of the port for operations.

But soon after this opportunity became apparent, all the same. Without waiting for the ship "Oktyabrskaya Revolyutsiya" to be fully unloaded, the dockworkers began moving the cement there as the holds were emptied. True, they succeed in unloading only six cars per day this way at present.

Alas, not only cement has found itself in such an unenviable position at the port. Because of serious planning miscalculations, the export cargo for a month was delivered here in 10 days in August. Of course, this created a number of difficulties not only for the dockworkers, but the railroad workers as well. True, the latter got out of this exclusive circle rather easily, it would seem. As an example, on 6 August 150 cars with paper were counted at the station as unloaded, but in fact they were emptied only after a week. Why? Because they were in the port's so-called interchange yard.

And what was the paper doing there? We saw a group of sealed cars at the ramp of warehouse No 8 in the second freight handling region. Some of them contained paint, and others contained acid. These cars have been standing here...since April this year.

"Everything is true. Chemical products put us in a very difficult position," admitted A. Vakhrushev, the port's deputy chief dispatcher for rail operations.

"But apart from this, about 100 cars with other freight have been standing idle for a month already. What is preventing them from being emptied rapidly?"

"All our warehouses are tied up. We need ships, but there aren't enough."

This is not the only reason, of course. Taking advantage of an obviously out-of-date 1962 regulation on the station's transfer of cars to the interchange yard for the port, the dockworkers quite often turn them into warehouses on wheels. In just 7 months this year, they have paid nearly 100,000 rubles for their rent. But it is even worse that valuable freight is paralyzed, and that the cars themselves are doomed to layovers of many months.

The shipping center agreement on the port's responsibility for layovers of only those cars that are located at the berths also is out of date, in our view. And no one bears material responsibility for those hundreds of cars not claimed by the dockworkers. Apparently the time has come for the Ministry of Railways and the appropriate departments to review normative documents and to put the interrelations of workers performing associated functions in state order.

The rule is well known: in order to load quickly tomorrow, unloading must be carried out quickly today. Unfortunately, they are forgetting about this at many ports of the Black Sea Shipping Company. In accordance with regulations agreed upon by the Ministry of Railways and the Ministry of the Maritime Fleet, the Black Sea ports should unload 683 cars every day in August. But in fact, they are emptying significantly fewer cars. The main reason is that the volume of freight being delivered is greater than the means to process it.

Specialists of the Odessa Railroad management drew an instructive conclusion from such practice. They calculated that the railroad has lost 3.5 million car-hours since the beginning of the year because of the extensive layovers of cars waiting for dockworkers to take them and the disruption of unloading plans. Let us add to what has been said that, because of unloading difficulties, a ban has been declared 36 times on delivery of such freight as potassium chloride, ore, metal and equipment to the ports at the request of the Black Sea Shipping Company and the railroad.

Have the needed lessons been learned from these sad statistics? The facts indicate that they have not. Until recently, the Ilichevsk dockworkers and station employees ensured that all cars with coal and ore were unloaded efficiently. Until express freight trains from the Donetsk, Northern and other railroads began coming in with fuel in greater quantity than stipulated by the delivery plan. And the trouble began immediately. More than 300 cars

above the norm were accumulated at the station. The situation was aggravated even further when express trains full of fertilizers, instead of the daily norm of 12 cars of potassium chloride (as much as the port can unload), began coming to Ilichevsk from the Kaliy station of the Belorussian Railroad. They sounded the alarm in Ilichevsk.

"I telephoned the chief of the Kaliy station and asked him why he is upsetting the shipment plan," says S. Rustamov, chief of the Ilichevsk station. "And he answered that nothing could be done, that a lot of output was piled up at the combine, cars were provided for it, and we shipped it to you. He promised not to send any more this way."

But these were empty promises. By 17 August, as we found out, the situation had not changed for the better at all. As before, the Belorussian Railroad employees are shipping potassium chloride on the route every day. Now 118 cars of it have accumulated at the station.

Unloading also has been poorly organized at the Belgorod-Dnestrovskiy port. They have had no intention of unloading 20 cars with beams here since 5 August. The railroad workers had to ask the city party committee for assistance.

But there are situations in which it is difficult to change anything. Recently the Rudnaya station, the newest on the Odessa Railroad, began operation. It has been called upon to serve the country's largest ore-carbon complex of the Yuzhnyy port. Every day two loaded express trains come here. And the disruptions begin right away. The problem is that the first section of the port was turned over without a single car dumper, and with lines that were laid out poorly.

Efficient interaction by associated workers, initiative and creative quick thinking are necessary today as never before. Many advanced brigades at the Ilichevsk cargo port are working in a well organized and highly productive manner to unload coal, ore and other cargo. During 2 weeks in August, competition in the second freight handling region made it possible to empty each one of the 232 cars an average of 12 minutes faster than stipulated by the norm. The brigade of dockworkers under the supervision of S. Komyagin performed a great service in this. This harmonious collective, which interacts well with the railroad workers, is deservedly set as an example to the others.

But there are disappointing misfires, too. For 3 days they did not unload a group of cars in this freight handling region because workers of the Ilichevsk "Soyuzvneshttrans" base were not able to pick up the documents needed. But is this really sensible, when even cars which have been unloaded ahead of schedule by dockworkers are not taken away for days and more by railroad workers of the Ilichevsk station?

At one time at the Odessa port, the brigade of the outstanding dockworker V. Zimoglyad undertook to unload 1,000 cars above the target in a year. Many labor collectives then followed its example. But this valuable initiative has

become extinct nowadays for some reason. With great difficulty, they have been able to name just two brigades of dockworkers at the port--that of N. Kundelskiy and Yu. Franchuk--who once exceeded the target for unloading cars.

It is a busy and crucial time at the shipping company ports and the port stations. The one who does not wait by the sea for the weather and begins working energetically and in a coordinated manner will win.

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## PORTS AND TRANSSHIPMENT CENTERS

### PIPE ACCUMULATES AT ILICHEVSK PORT; RAILROADS BLAMED

Moscow VODNYI TRANSPORT in Russian 27 Aug 85 p 3

[Article: "Fully resolved..."]

[Text] On the piers of the Ilichevsk port, 160,000 tons of pipe for construction of the gas pipelines is lying in huge stacks. In just 6 months, 19,000 cars less have been given to the port. Railroad workers have paid more than 600,000 rubles in fines.

Dockworkers cannot understand at all why those in related work are increasing the number of empty runs by railroad cars instead of increasing freight shipments. For example, in June more than 4,000 empty gondola cars left the Ilichevsk port on the neighboring Donetsk Railroad, while there are 90,000 tons of freight, the same pipe, metal and equipment in the port for enterprises in its area. And in the first half of July another 2,600 units of empty cars left there.

And that is typical. While previously they left the port 70-80 percent of the cars for their own unloading, only 20-25 percent have been left since March. Because the warehouses are overloaded, ships are waiting to be unloaded and consignees are sending anxious telegrams to the port.

As noted in the joint socialist pledges, the crew of the diesel vessel "Ion Soltys," dockworkers brigade No 306 of the Ilichevsk port and collectives of the Ilichevsk station and the Odessa Division of the railroad, having assumed labor duties for fulfillment of the final year of the five-year plan ahead of schedule, "are fully resolved to deliver large-diameter pipe to the builders of the Urengoy-Center No 2 gas pipeline on time and in good condition." In the pledges signed on behalf of the Odessa Division collective and the Ilichevsk station by N. Kravchenko, deputy chief of the division; Sh. Rustamov, chief of the station; V. Kotseruba, chairman of the trade union committee; and others, it was clearly stated: "To ensure delivery of 120 cars per day within the period for shipment of all large-diameter pipe and accompanying equipment coming in, and to ensure that not one empty car leaves the port."

A good pledge. But as the saying goes: you gave your word--keep it. Perhaps the managers of the Odessa line will explain the reasons why their promises were not carried out and the oblast people's control committee will give an appropriate evaluation of their resolution of a most important national economic task?

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## PORTS AND TRANSSHIPMENT CENTERS

### NEW PORT FACILITIES PLANNED FOR YALTA

Moscow IZVESTIYA in Russian 1 Sep 85 p 1

[Interview with O. Aslanov, acting captain of the port of Yalta, by V. Shcherban:"The Port Is Changing its Address"]

[Text] The decision has been made to transfer the cargo port of Yalta outside the city limits. Many persons who have visited this southern city and strolled along the seafront surely have seen the huge ships with sand and gravel being unloaded. But what about the local residents, especially those in nearby rayons, who have been doomed to hearing the din of portal cranes day and night and the roar of heavy dump trucks trailed by dust from the cement and coal being carried! And now it looks as if Yalta will become the first city on the Black Sea coast with just one port--a passenger port. We spoke by telephone with O. Aslanov, acting captain of the port. And the first question, naturally, was: "When will this take place?"

[Answer] Construction of the first section of the cargo port will be completed at the end of 1986. But some of the cargoes now are being processed already in the Massandra region, where this branch also is being established. The rest of them are at the former location for the present. But we will be taking away the portal cranes here in the future and deepening the water area to receive large passenger ships. We will do away with the fuel depot, which is a potential hazard. One berth already has been put into operation at Massandra, which will make it possible to accommodate dry-cargo ships up to 114 meters long. The breakwater is basically ready. Four transshipping [peregruzochnyy] cranes are in operation.

[Question] When the port moves, evidently, the servicing of passenger ships also will be improved?

[Answer] Yes. On certain days we have so many of them that one of the ships is compelled to approach the berth by the stern, and others are serviced in the roadstead. In such cases, we transfer passengers to a launch and bring them to shore. This is fine in a calm sea, but in a storm?

[Question] This means that it will become more convenient for the passengers after this reconstruction?

[Answer] Why "will become"? The sea terminal already has been expanded, and it has been equipped with a spacious cashiers room. A large number of hydrofoils are running to Sochi and Odessa this year.

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## PORTS AND TRANSSHIPMENT CENTERS

### BRIEFS

RENI MARITIME PORT EXPANSION--Reni--The Reni maritime cargo port continues to grow and develop. During the 11th Five-Year Plan, four new berths were put into operation here, the number of portal cranes and wheeled equipment has been increased significantly, and new multistory dwellings have been built. The port fleet also has been increased over these years. A new tugboat built in fraternal Yugoslavia, the "Inzhener Koryakovskiy," was acquired recently for maneuvering operations. [By Ya. Kozyr] [Text] [Moscow VODNYI TRANSPORT in Russian 30 Apr 85 p 2] 8936

NEW OSETROVO MECHANIZED BERTH--Ust-Kut, Irkutsk Oblast--A mechanized berth has been put into operation at the port of Osetrovo on the Lena River. It will ensure more expeditious dispatch of containers to the northern rayons of Irkutsk Oblast and the Yakut ASSR. The collective of the Lenabamstroy trust has pledged to put another berth with approach routes and a complex of auxiliary facilities into operation by the end of the year. [Text] [Moscow SELSKAYA ZHIZN in Russian 7 May 85 p 1] 8936

NEW CHEBOKSARY PORT BERTH--Cheboksary--A berth for technical maintenance of passenger and transport vessels has been put into operation in the Novocheboksarsk cargo zone. Motor vessels passing on the Volga now will be able to perform all the necessary operations connected with environmental protection. [By I. Volkov] [Text] [Moscow VODNYI TRANSPORT in Russian 20 Jul 85 p 1] 8936

ODESSA PORT EXPANSION BEGINS--Odessa (TASS)--The areas for expansion of the port of Odessa have been determined. Yesterday suction dredges discharged the first cubic meters of earth at the place where large new berths and warehouse facilities will be erected. [Text] [Moscow VODNYI TRANSPORT in Russian 27 Jul 85 p 1] 8936

CSO:1829/250

INTERSECTOR NETWORK DEVELOPMENT

INSTITUTE DIRECTOR ON AVIATION, UNIFIED TRANSPORT SYSTEM

Moscow VOZDUSHNYY TRANSPORT in Russian 17 Sep 85 p 3

[Interview with Boris Sergeyevich Kozin, director of the Complex Transportation Problems Institute attached to the USSR Gosplan, doctor of technical sciences, and honored scientist and technologist of the RSFSR, by E. Maksimovskiy and A. Khodyrev: "A Unified Transport System: The Strategy of the Quest"]

[Text] The transport mainlines--in the air and on the ground--are fully justified in being called the arteries which carry the blood of the Soviet economy. The immense role of transport in accelerating the country's socioeconomic development and intensification of the national economy has been emphasized repeatedly at recent plenums of the party's central committee.

Transport workers have a great deal to do in the future as well. Experience bears out that further integration and cooperative activity of the different forms of transport contribute to an even greater extent to meeting the requirements of the national economic complex and the population for freight and passenger transportation. A discussion with B. S. Kozin, director of the Complex Transportation Problems Institute attached to the USSR Gosplan, doctor of technical sciences, and honored scientist and technologist of the RSFSR, is devoted to this course being consistently shaped toward development of a unified transport system.

[Question] Boris Sergeyevich, how could the significance of transport be defined in the new stage of the USSR's economic and social development?

[Answer] This question can be answered with one word--key. In analyzing the problems facing the country in decisively increasing the efficiency of public production, we see how the influence of a unified transport system on all aspects of our society's economic activity is increasing. And this is understandable. The processes of specialization and subcontracting in production are being intensified continually, transport and economic ties are

becoming complicated, and the distance of shipments is being increased in connection with the establishment of large enterprises of the extractive and processing industry in the country's eastern regions.

Over the past 10-year period much has been done for substantial reinforcement of the material and technical base of all forms of transport. The extension of railroads, improved roads and main pipelines has been significantly expanded. The rolling stock and fleet have been thoroughly renovated and modernized. The railroads' transition to electric and diesel traction has been completed. The maritime and river fleets have been shifted to diesel power. Practically all air transport operations are being performed with modern aircraft with gas turbine engines.

New stations, terminals and airports have made their appearance. Advanced methods of shipping freight using containers and packaging have been developed.

I will cite just a few examples which show the achievements of Soviet transport. More than half the world's freight turnover and more than one-quarter of the world's passenger turnover on railway routes occur on our country's railroads, which make up 11 percent of the length of the world's railroad network. The achievements of our air transport are impressive. Not one country in the world has such long intrastate air bridges as our nonstop air routes from Moscow to Khabarovsk, Vladivostok, Magadan, Yakutsk and Kamchatka. Calculations indicate that each million passengers flown by air transport save 1.5 to 2 million man-hours on trips compared with trips by rail, as if thereby increasing the country's manpower resources. Such is the additional efficiency of fast air transport.

It may also be stated this way: in the modern world, transport sets the tone to a large extent for the processes of intensification of the entire national economic complex.

[Question] What may be said about the nature of the scope of problems facing the country's transport system over the long term?

[Answer] Being rightfully proud of achievements, we clearly see substantial difficulties and shortcomings in the work of the transport system which have an effect on different areas of the economy.

Today this involves not simply overcoming some negative trends in the country's economic development and providing for an increase in the growth rate of the national economy. This concerns new quality in our development, rapid advancement in strategically important directions, structural reorganization of production, a shift to intensification of the economy, and more complete resolution of social problems. As applied to transport--both in this period and the more distant future--we consider the principal task to be implementation of measures to complete the formation of a highly efficient unified transport system in the country and provision for its fully balanced development in the interests of other sectors of the national economy.

The task is exceptionally complex and there are no analogies to it in world practice. We have such a vast territory--one-sixth of the earth's land! How do we resolve the transport problem under our country's conditions over the long term? First of all, of course, we must follow the course of reinforcing the material and technical base, utilizing in every possible way the achievements of scientific and technical progress, increasing the efficiency and coordination of all links in the transport system itself and efficient interaction with other sectors. Freight shipments are increasing, and significantly. According to the institute's calculations, by approximately 14 percent for all forms of transport. By 12 percent for air transport, for example. At the same time, we came to the conclusion that the national economic efficiency of freight turnover will develop even more. Why? Figuratively speaking, because of the reduction in ballast. The concentration of nutrients in mineral fertilizers will be increased. The weight of metal in industrial products will be reduced. Coal and ore enriched locally and thoroughly processed timber will ensure efficiency in shipping this raw material greater distances than now. Or take nuclear power, which will take a step with more assurance in regions that are far from the basic fuel bases... Peaceful nuclear energy will save us from shipping vast quantities of solid and liquid fuel.

[Question] And there will be more passengers than today...

[Answer] Of course. And not only because of the natural increase in population. The increase in incomes accordingly will increase the mobility of our countrymen as well. I mean least of all the movement to a new place of residence. The routes taken by vacationers, who now number in the millions, will be lengthened. And according to our estimates, total passenger turnover will increase by approximately 13 percent in the future. And the increase in passenger turnover in air transport--up to 18 percent--is projected to be the most dynamic. Aviators, we must think, are preparing seriously for this unusual demographic explosion.

[Question] Which economic regions, in your view, will particularly need to use air transport?

[Answer] Long ago, since the first five-year plans, civil aviation has been quite correctly called "the key to the development of new territories." Despite the existence in the country of a far-flung transport network, quite a few almost inaccessible blank spaces remain today, too. Under impassable road conditions, every step forward in economic development rests on aviation.

As is well known, large-scale operations to develop the West Siberian oil and gas complex will also be continued in the 12th Five-Year Plan. The world has never seen such rates of oil and gas production as in this region of the USSR. The first million tons of oil and the first billion cubic meters of gas were extracted here 20 years ago. But now the same amount is extracted in just one day. The aviators working here are rightfully sharing the labor glory of geologists and oil and gas workers.

In Western Siberia in the next few years, several dozen new oilfields are to be developed, the Yamburg condensed gas deposit will be built up, and development of gas storage facilities [kladovyie] on the Yamal peninsula is to begin.

Dozens of labor collectives in civil aviation are taking part in development of natural resources in the North of the European part of the country. Development of oil and gas deposits in the Timano-Pechorskiy Territorial Production Complex is proceeding on a larger and larger scale.

New air bridges will be extended to a large number of construction sites in the northeastern part of the USSR, where large-scale operations are to be undertaken at the Deputatskiy Ore Enrichment Combine, new deposits of nonferrous metals on the Chukotskiy Peninsula and gas and oil deposits in the country's eastern regions will be developed, and hydraulic power will be developed on the northern rivers.

A complex stage of intensive economic development of the vast territory (1.5 million square kilometers) which gravitates toward the Baykal-Amur Mainline stands out particularly. Here is the mineral wealth of coal and iron ore, rare and nonferrous metals, agricultural ores, asbestos, hydraulic power and forest resources. Aviators were among the first persons here, and together with hundreds of thousands of workers from other sectors, they are to take part in extensive development of a very promising economic region of the USSR.

Of course, it costs the state a considerable price to use aircraft in remote regions. Transport expenditures here are double to triple the average for the country. But precisely air transport, as we see in the example of Western Siberia and the BAM [Baykal-Amur Mainline], determines to a large extent the pace of geological operations, the workability of local social programs and the effectiveness of the expenditures of many billions. So the more rapid development of aviation which is typical for these regions--this is the command of time, and the country's strategy.

According to our estimates, the volume of freight shipped by air transport to the new economic regions may be no less than doubled in the next few years. At the same time, we include freight costing no less than 1,600 to 1,700 rubles per ton in the shipments transportable by air.

And one more important task must be mentioned--taking shift brigades to their places of work. With the help of air transport, the manpower resources of the country's south are becoming a constructive physical force in the Far North, in Siberia and the Far East.

[Question] Boris Sergeyevich, we will take into account that the tasks of civil aviation in the new five-year plan are obvious. But having defined the strategic limits, we must think about how and at what cost we will succeed in reaching them...

[Answer] An important point. For the further development of passenger flights and freight shipments by air transport on an expedient scale and increased efficiency in this sector (flights at regular intervals, fuel economy, and so forth), replenishment and improvement of the fleet of aircraft must be continued, putting into service new aircraft with better aerodynamic, structural and weight characteristics; the extent to which the network of airports are technically equipped also should be increased, and their structure improved.

[Question] Can you tell us about this in more detail?

[Answer] Provision has been made for delivery of Il-86, Yak-42 and Tu-154M aircraft to the Ministry of Civil Aviation for use on the mainline routes, as well as more economical and improved aircraft which will be developed in the next few years.

It is planned to replenish the fleet of aircraft for local air routes and special-use aircraft with L-410, L-610, V-3, An-28 and other aircraft. Replacement of all existing helicopters with their new versions and types, including those with a lifting capacity of 45 to 55 tons, also is envisaged.

As far as airports are concerned, the technical level of the existing network must be improved practically without increasing their overall number (not including those which will appear in the newly developed regions). It is planned to increase by a factor of 1.5 the number of airports which accommodate mainline aircraft, so that they cover the capitals of all union republics; large industrial, cultural and resort centers; and nearly all cities with over 200,000 people (excluding those which are located nearby even larger centers). We also include in this category more than half the cities with populations of 100,000 to 200,000, as well as a considerable number of cities located in remote regions.

Siting of airports to accommodate heavy aircraft on local air routes is worthwhile in oblast centers with even lower population. In addition, the airports for MVL [local air routes] should be located in a part of the country that has been lived in, in those rayon centers where reliable motor vehicle transport with oblast cities is lacking, and in northern and eastern rayons--at all points which are bases for industrial centers which exist or are being developed.

It is planned to carry out the predominant part of operations to develop airports of a higher category in the forthcoming years as well, and to organize the network of airports to accommodate medium-range mainline [srednyye magistralnyye] aircraft. For this reason, provision is being made for construction of additional runways. The rates at which airports are being equipped with air traffic control systems and landing systems which permit flights in any weather and with mechanization and automation of engineering processes to attend to passengers and aircraft are being expedited.

[Question] VOZDUSHNYY TRANSPORT has stressed repeatedly that efficiency in transport hubs depends to a large extent on a close partnership among the various departments which are involved in transportation. Are any specific concepts being formulated in your institute on this problem?

[Answer] A unified transport policy is also at the command of time. It is well known that physical losses are high and freight flows are disrupted most of all where the sectors come together. We believe it necessary to put a system of tariffs on freight shipments into effect which are differentiated in accordance with the quality of transport service, and so that economic incentive is provided for ministries to increase the productivity of shipments. It is also important to rework and reconfirm regulations, codes and rules for freight shipments on a unified legislative basis.

We must also introduce unified regulations for the planning and organization of container and packaged shipments by all forms of transport, using the automated subsystem for controlling container shipments ("ASU-konteyner" [automated control system for containers]).

The rules and conditions for carrying passengers by the different means of transport, as well as achieving uniformity in payment for the same types of services, have to be unified. It has long been necessary to coordinate schedules for the movement of trains, aircraft, ships and buses at the points where they come together. We are also attaching considerable importance to the introduction of a system of qualitative indicators to evaluate the work of transport enterprises.

I have designated only the individual points which we will be guided by in continuing the course toward a convergence of the interests of the various transport sectors which is economically advantageous.

[Question] You touched upon the important problem of a search for new indicators. It is also under way in civil aviation. What criteria, in your view, are most capable of influencing the efficient use of air transport, more economical consumption of fuel and other resources?

[Answer] Yes, planning indicators and economic criteria are needed which will most completely express the public's economic demands of a given sector. Of course, one indicator or another by itself cannot be only good or only bad. Evaluation of it depends to a large extent on the specific problems being resolved at a given time.

I will illustrate my thinking. The indicator "hours of flying time accrued" being planned by civil aviation makes it possible to reduce to a single denominator the different types of air transport operations in many sectors of the national economy. But it is poor because it often is not conducive to the efficient use of aviation equipment and the economical expenditure of material resources, including such rigidly limited ones as fuel. This



indicator also does not reflect the interests of the sectors of the national economy which are customers. It seems to us that the plan indicators and criteria for evaluating economic activity now in effect in civil aviation need improvement, including those which go through production verification in a number of northern aviation enterprises (ton-kilometers).

I believe that in the area of passenger service (and after all, such flights make up the basis of air transport's work) one of the directive indicators approved centrally should be **PASSENGER** [in boldface type], the number of passengers carried.

In our opinion, natural indicators have to be planned in the field of aircraft use in the national economy: areas treated in agriculture--in hectares, the areas covered by aerial photography, and so forth. And it would be more expedient to retain "hours of flying time accrued" as an estimated indicator.

Testing of one criterion or another also is under way in other transport sectors. Inasmuch as the forms of transport have a common economic nature, it certainly would be more correct to work out unified concepts and unified initial evaluations. Such a position would correspond to the interests of intensification of the national economy.

8936  
CSO: 1829/10

EXPERIMENTAL SYSTEMS

DESIGNER INTERVIEWED ON MAI AIRSHIP PROJECT

Moscow SOVETSKAYA ROSSIYA in Russian 10 Jul 85 p 6

[Interview with Sergey Mikhaylovich Yeger, head of the aircraft construction department of the Moscow Aviation Institute imeni S. Ordzhonikidze, Hero of Socialist Labor and corresponding member of the USSR Academy of Sciences, by S. Taranov: "It's Time for the Airship to Take Off"; date and place not specified]

[Text] It seemed that the airship had disappeared into the past forever. However, over the past decades scientists from many countries have been creating a new generation of airships. One of the examples of that is the work of the aircraft construction department of the Moscow Aviation Institute imeni S. Ordzhonikidze, which is headed by Sergey Mikhaylovich Yeger, Hero of Socialist Labor and corresponding member of the USSR Academy of Sciences.

[Question] Sergey Mikhaylovich, you have been developing aircraft nearly all your life. Your work as a designer exists in every aircraft of the "Tu" family; you have been a deputy of A. N. Tupolev for many years. How do you explain such a sudden interest in airships?

[Answer] Indeed, I have not been an active supporter of airships. However, the logic of scientific research and the demands of the national economy compel us to seek new solutions. Our department was assigned the task 6 years ago of finding the best ways to resolve the transportation problem in the regions being developed in Siberia and the Far East. Naturally, we assessed the capabilities of airplanes first of all. Yes, in the near future superheavy aircraft with a cargo capacity of 150 to 200 tons may be climbing into the sky. The airborne trucks are fast, convenient and... uneconomical: the behemoths require special airports with complex engineering structures, special-purpose equipment and developed ground services.

If airports are built only near large plants and mines, tens and hundreds of them will be required all the same--and the expenditures on the whole will not be less than those for making roads on the surface. And after all, much of the freight still must be delivered by helicopters and motor vehicles over the gas pipeline routes and to many other remote projects...

[Question] Incidentally, about the helicopters. Why aren't they suitable?

[Answer] In the foreseeable future, there is no technical capability of building a helicopter that is powerful enough and has a range that is long enough. This is also disadvantageous from economic points of view. It is different with airships. As long ago as the 1920's and 1930's they carried up to 80 tons of cargo and flew nonstop for 12,000 kilometers.

[Question] And they literally fell from the sky, it cost a great deal to cover their vast "body," and they exploded suddenly when hydrogen from the envelope came in contact with the air...

[Answer] Unnecessary fears. The problem of the airships' reliability has been resolved today. Helium is used instead of explosive hydrogen, the envelopes themselves are made of fireproof synthetic materials, and they are guided by electronic autopilots. Moreover, it has a range of no less than 4,000 kilometers at 150 kilometers per hour, with a cargo capacity of up to 500 tons and more!

[Question] And is this precisely what characterizes the airship design developed in the MAI [Moscow Aviation Institute]?

[Answer] With the exception of the operating gas. Our craft is called "Termoplan" ["thermoplane"] because we have replaced part of the expensive helium with hot air at a temperature of 150 to 200 degrees. The air is heated with the simplest gas burner, also developed at the MAI. And the shape of the thermoplane is really unusual: it is not a "cigar," but a "flying dish"--a disk with an external diameter of 180 meters. Such a shape reduces the effect of a crosswind to a fraction as much and creates additional lift.

The thermoplane is extremely simple. There are no soft landing conditions--it hovers at altitude, lowering cargo platforms on cables. But it can land--with the aid of a vacuum "anchor" which originates under the base of the platform, and reliably "roots itself" to the ground. As you see, there is no point in making landing areas or retaining takeoff crews.

Finally, the thermoplane economizes fuel estimated at millions of tons. The engines from a Tu-114 can be used for its propulsion, but at the same time, it consumes five times less kerosene or natural gas than an airplane.

[Question] Precisely which national economic problems are resolved by the use of airships?

[Answer] It is difficult for me to predict the entire range of duties of the airship. There is protection against forest fires here, assistance in piloting ships, installation of power transmission lines by air, and flying weather stations, and passenger transportation.. I will designate only those problems which should be resolved first of all.

FIRST. Most of the freight reaches the regions being developed by seas and rivers during the short weeks of the northern summer. Shipments are piled up

and stored at the ports and... they stand for long months until vehicles take them over the winter roads. Many reach the customer in a year and a half to 2 years (!) in pretty shabby condition, and frequently not fit at all for the many subsequent reloadings and transshipments. Airships fly the year round, landing directly where their "load" is needed. The delivery time is no more than a week from any point in the country.

SECOND. Every year extremely heavy hardware weighing 100, 200 and 300 tons or more is shipped to the east. As an example, you can't put a GES turbine on a motor vehicle. They carry it dismantled, fitting out special expeditions for this. It is difficult to estimate what trips like this cost! But after all, delivering the turbine is half the task. It must be put together and tested under conditions in the tundra and the taiga... How would the situation be simplified if a unit fully completed and tested at the manufacturing plant were delivered by airship?!

THIRD. The people's working conditions and the pace and quality of work can and should be improved with the aid of airships. I will give an example. In October 1981, seven bold persons set out from homey Nadym for the future gas fields in the Tyumen north in two all-terrain vehicles. For 30 kilometers on a treacherous, practically unknown route, the destination of which was a completely bare section of tundra. Through truly heroic efforts the people set the first "beams" there and prepared everything necessary to receive the second and no less courageous landing party. And 2 years passed before the first little houses spread out in the gas producers' settlement of Yamburg...

But the airship could have delivered and set up the housing units with all the conveniences, brought vehicles and machinery, and laid the pipe for the proposed gas line in advance, even before construction was begun. The ecological advantage also is added to the obvious socioeconomic advantages. It is well known, after all, how the nature of the North is easily harmed.

In general, I recall few projects and ideas that are comparable in efficiency to the utilization of an airship.

[Question] So we will soon see them in the sky?

[Answer] Unfortunately, I cannot provide exact dates. A paradoxical situation has taken shape around the airships. On the one hand, there is an urgent public demand. Gas, oil and construction workers, power engineers and geologists are waiting for such transport. On the other hand, there are no organizations in our country which could be charged with the construction of airships capable of transporting heavy and large-size cargo or with conducting broad research in this field.

I am not afraid to reiterate, after stressing the merits of this aircraft once again: the work is worth it. One of the NII's [scientific research institutes] of the USSR Gosplan has estimated that a ton-kilometer covered by an airship costs 4 to 5 kopecks, six times less expensive than by an all-terrain motor vehicle, in the Polar region. I note in particular that this 5-kopeck coin includes all expenditures for construction of special shops in industry and the organization of a service for its operation and technical maintenance. Why are we delaying? What is there to fear? It's time for the airship to take off.

8936

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MISCELLANEOUS

NEW TRANSPORT CONSTRUCTION MINISTER ON SECTOR DEVELOPMENT

Moscow TRANSPORTNOYE STROITELSTVO in Russian No 9, Sep 85 pp 1-5

[Article by USSR Minister of Transport Construction V. A. Brezhnev: "To the Front Lines of Scientific and Technical Progress"]

[Text] An urgent task has been set before the party and all the people by the decisions of the April (1985) Plenum of the CPSU Central Committee and the directions of the conference in the CPSU Central Committee of 11-12 June 1985--to accelerate the country's social and economic development on the basis of scientific and technical progress and to find and put in action all resources for increasing the efficiency of public production and product quality. At the same time, this refers not simply to an increase in the growth rates of the national economy, but new quality in our development, rapid advancement in strategically important directions, the structural reorganization of production, a shift to the track of intensification, and thorough reorganization of the economic mechanism and the entire system of management.

The problem of intensification and increasing efficiency has been brought very acutely to the attention of construction production, which is lagging behind as usual and still is not meeting the requirements of the national economy. The introduction of fixed capital and production capacities lags substantially behind plan targets and the level of capital investment assimilation. In a number of cases, the projects being erected do not meet current requirements with regard to technical level and operational characteristics. For a long period of time we have not been successful in resolving the problem of decreasing the duration of construction and the investment cycle as a whole.

The resources and opportunities available to increase labor productivity and reduce the proportion of manual operations which make up half of all labor expenditures are being utilized extremely poorly in construction.

The shortcomings characteristic in capital construction as a whole throughout the country also take place with us in transport construction. With overall fulfillment of the targets for the volume of construction and installation

operations and the introduction of basic capacities in the current five-year plan, we permitted a lag for 4 years (over 400 million rubles) on the projects of our basic transport customers--the MPS [USSR Ministry of Railways] and the RSFSR Minrechflot [Ministry of the River Fleet].

Failure to ensure fulfillment of targets for increasing labor productivity is a major shortcoming in our work. This target, set by the plan at 15.8 percent for 4 years, has been fulfilled at a level of 9.2 percent, or by less than 60 percent as much. The state of affairs is not improving in the final years of the five-year plan, either: with a target of 3.1 percent increase in labor productivity, it amounted to only 0.9 percent in the first half of the year, and the Glavbamstroy, Glavmorrechstroy and Glavtonnelmetrostroy [Baykal-Amur Mainline Construction, Maritime and River Facilities, and Tunnels and Subways Construction main administrations] permitted significant deterioration in this indicator.

More than one-third of our trusts are not systematically fulfilling plans for volume of work.

Despite the continuing increase in the capital-labor ratio and machine-labor ratio of transport construction workers, the output-capital ratio is falling sharply and the proportion of manual labor is being decreased extremely slowly.

In the process of certification conducted in 1983-1984, it was recorded that more than half of all our workers in construction, industry and ancillary economic operations have been engaged in manual labor. Moreover, the level of manual labor reaches 60 percent in the Kuybyshevtransstroy, Sevzaptransstroy, Tsentrotransstroy and Beltransstroy [Kuybyshev, Northwest, Central and Belorussian transport construction] trusts.

There are also important claims against the quality of the planning of transport projects, which at times falls short of efficient solutions.

Year after year the plans for putting the products of the construction industry into use are not fulfilled. This year the plans for production of a number of the most important types of advanced output are not being fulfilled by the Glavstroyprom [Construction Parts and Assemblies Production Main Administration], the Glavmorrechstroy and the Glavtonnelmetrostroy. The state of affairs with components for large-panel house building is particularly intolerable. Last year alone, construction workers received more than 180,000 square meters of structures less than they should have. The plan is being fulfilled at a level of 75 to 80 percent this year.

In 4 years of the five-year plan, only 17 percent of the requirement for such advanced structures as complete roof slabs for production buildings and 28 percent of the prefabricated room units for service and technical buildings have been turned out. At the same time, the extent to which the structures being turned out are ready for construction use does not meet current requirements and leads to extensive and unjustified labor inputs to finish them, and at times to repair defective plant output at the construction site.

Meanwhile, specialists' calculations indicate that an increase of 1 percent in the level of prefabricated manufacture of dwellings, for example (with the existing annual volume of 1.5 million square meters put into use), makes it possible to save up to 18,000 man-days at a construction site. If it is taken into account that the level of prefabricated manufacture for the sector as a whole is no more than 45 percent and differs substantially by types of construction (residential buildings 36 percent, production buildings 45 percent, and public buildings only 19 percent), then it becomes apparent what vast resources for increasing labor productivity may be brought to light by solution of this problem.

The quality of a number of articles continues to be very low. Technology for the production of precast reinforced concrete structures, 80 percent of which are manufactured by obsolete unitized flow line [potochno-agregatnyy] and bench [stendovyy] methods, is being improved slowly. Reinforcing and especially welding equipment is in unsatisfactory condition.

There are many shortcomings in utilizing the capacities of other production facilities. For example, only half of the capacities to produce synthetic porous aggregates are being utilized. At the same time, the extent to which organizations are provided with them for use in safety structures and as filler materials is less than 70 percent.

No more than 80 percent of the capacities for timber hauling and the production of woodworking items are being utilized, and less than 50 percent of the capacities for turning out buildings of the container type in inventory are being utilized.

Better production of crushed rock continues to be desired.

Today we cannot be satisfied with the status of work to master--and especially to turn out--specialized machines and machinery. Plants of the Glavstroyemkhanizatsii [Mechanization of Construction Main Administration] are not coping with targets for series manufacture of new machines, machinery and equipment to the full extent. The Glavmostostroy [Bridge Construction Main Administration] and the Glavtonnelmetrostroy are not fulfilling targets, either. At the same time, only 75 to 85 percent of the capacities of plants commissioned in the current five-year plan (Birobidzhan, Shimanovsk, Tayshet, Komsomolsk, Zolotonosha) are being utilized. Gross volume of machine building output valued at up to 9 million rubles is being lost in a year on this.

Increasing the quality of equipment turned out is an exceptionally acute problem. Our losses in work time and the downtimes of construction machinery are significant. Just the recorded losses of work time in the past year amounted to more than 600,000 man-days, which is equivalent to the daily absence in production of about 3,000 persons.

Excavators, bulldozers and truck cranes in many construction organizations are in operation no more than 10 hours per day. The average of recorded machinery downtimes for the ministry is 13.4 percent, but in a number of main administrations it is up to 18 percent. Efforts to renovate and expand the machinery park are made ineffective by poor equipment utilization.



A significant improvement in the quality of construction and industrial output is an important resource to increase efficiency in our work. In many cases, enterprises of the construction industry and construction organizations are turning out a product which does not meet the requirements of state standards and are performing construction and installation operations which violate construction norms and specifications.

A reliable screen can and must be placed against a shoddy and obsolete product when certification is made for categories of quality. At present, only 78 percent of the production subject to such control in the sector has been certified in accordance with two categories.

Comrade M. S. Gorbachev, general secretary of the CPSU Central Committee, emphasizes that the quality of a product should be a subject not only of professional pride, but national pride as well. Everything that we build should meet these high requirements. "Built by the Ministry of Transport Construction" and "excellent"--these concepts should become synonymous. This spirit must be fostered in all workers, engineering and technical personnel, and employees.

Unconditional fulfillment of plans to introduce new equipment is an important resource for increasing the technical level of our production. We have serious losses because these plans are being fulfilled at a level of 65 to 75 percent annually. Of 67 plan targets for 6 months this year, only 49, or 73 percent, were completely fulfilled. The Construction Parts and Assemblies Production Main Administration is absolutely not coping with the plan for new equipment, which is causing alarm and prompts the necessity for urgent measures.

Engineering preparation of construction production is another important resource for improving our work. Organization of operations which is well thought out, detection of all the possible bottlenecks, intelligent arrangement of fully mechanized systems--all this contributes to successful fulfillment of plan targets. The problems of utilizing all resources in the sector have become the subject of an important discussion at a special enlarged meeting of the collegium of the Ministry of Transport Construction and the presidiums of the central committees of the Railway Transport and Transport Construction Workers Union and the Motor Transport and Highway Workers Union. Organizational and technical measures of the ministry for implementing decisions of the April (1985) Plenum of the CPSU Central Committee and the conferences of 11-12 June 1985 in the CPSU Central Committee were reviewed and confirmed at this meeting. The principal objective of the measures is to ensure that organization of production and labor is improved on the basis of mobilization of all internal resources and that the latest achievements of science and technology are utilized on a broad scale, to bring about a sharp turn toward intensification of construction and industrial production, to provide for the entire increase in volume of construction and installation operations without increasing the labor force, and to reduce the time spent on construction by lowering the norms for consumption of rolled metal, lumber, cement, and fuel and power resources.

The following tasks have been set for the subsectors of transport construction to achieve this objective.

In the field of railroad construction:

- to introduce overall mechanization of track operations through the broad use of highly productive modern machines and machinery;

- to reduce by no less than half as much the proportion of manual operations in installing lines at dispersed projects by introducing a combination of machines based on the T-158 tractor; and

- in raising the road bed, including in regions with a severe climate and unfavorable hydrogeological conditions, to reduce the volume of operations by no less than 30 percent and to improve their quality by wide use of geotextile and heat insulating materials and polymer films.

In erecting residential, production and public buildings:

- to significantly increase the industrialization of construction by increasing the level of prefabricated manufacture, coupled with a high degree of construction readiness of the prefabricated components and items delivered to a construction site.

In the electrification of railroads and the construction of projects for communications, the STsB [signalization, centralization and block system] and power generation:

- to increase the rate of operations by a factor of 1.2 to 1.3; and

- to reduce the inputs of manual labor to two-thirds as much through overall mechanization of operations through installation of a catenary system and trenching under cables and increasing the level of prefabrication for communications and STsB projects (in particular, stations for ETs [electrical centralization of switches and signals]--up to 100 percent).

In tunnel and metro construction:

- to increase mechanized tunnel work up to 75-80 percent of the overall volume of operations; and

- to introduce highly effective casing structures and modern means of stabilizing the soil in water-saturated and fissured rocks.

In bridge building:

- to reduce the construction periods for large highway and city bridges and overpasses by a factor of 1.5 to 2; and

--to reduce metal input by introducing versatile, all-purpose engineering methods in their construction when the degree of prefabrication in the structures for piers is up to 90 percent for small and medium-sized bridges and up to 60 percent for large bridges.

In hydraulic engineering construction:

--to reduce the labor-intensiveness of operations by a factor of 1.2 and periods for construction by no less than a factor of 1.5 by introducing the technology of manufacturing and installing industrial structures of unitized elements and enlarged blocks weighing up to 500 tons, and by erecting hydraulic engineering structures at sea with the use of heavy-load self-raising platforms.

In highway and airport construction:

--in conducting earth moving operations, to employ asphalt and cement concretes extensively using highly effective chemical additives, the residue from rock crushing, the waste products of industry and geotextile and polymeric materials.

In resolving the main problems of increasing the technical level of construction production, the relationship to development of the production base must be radically changed. Without accelerating its development with high quality, the tasks of accelerating scientific and technical progress will not be solved. For this reason, emphasis has been put in the measures on substantial improvement in all this work and completing formulation of the plan for re-equipment and reconstruction of the ministry's operating enterprises is envisaged, directing no less than 50 percent of the capital investments allocated for construction of the production base to these objectives. The Glavstroyprom and other main administrations, the Capital Construction Administration, and the Administration for Planning the Production, Unit Completion and Distribution of Metal and Reinforced Concrete Structures should actively engage in this work.

The mistake permitted in the concluding five-year plan, when only 19 percent of the capital investments were directed to the technical re-equipment and expansion of operating enterprises, must not be repeated.

Finally, we cannot tolerate any further losses because of the lack of a serious attitude toward fulfillment of construction plans with our own production base, as a result of which about 30 million rubles of SMR [presumably, construction and installation work] is not being assimilated every year. Construction of projects is being drawn out for long years as the result of incorrect planning as well. Thus, the complex of projects being built at the Novokiyevsk Gravel Plant should have been completed in 30 months, according to standards, but it has been under construction for 6 years. The construction periods at the Overyata ZhBK [Reinforced Concrete Structures]

Plant were overestimated by more than three times as much. Projects at the Amazar DOK [Wood Processing Combine] should have been built in 18 months according to standards, but they have actually been under construction for 11 years. It is not surprising that we are putting projects into operation that do not meet today's requirements.

Cases of incomplete planning, when the commissioning of housing and projects for social and cultural use and everyday living are not provided for along with production projects, still persist.

As noted at the June conference in the CPSU Central Committee, the dominant role in carrying out the scientific and technical revolution belongs to machine building. It is apparent that we also must devote much more attention to this area. In the 12th Five-Year Plan it is being planned to substantially increase the proportion of machine building in the overall production volume of the ministry's metal working industry by broader introduction of unit repair at plants of the Glavstroymekhanizatsii, organization of firm repair of equipment turned out by our enterprises, as well by specialization of repair enterprises of the production main administrations in the repair of specific types of equipment not only for their own needs, but for other main administrations as well. These measures will make it possible to release capacities for machine building.

It is planned to manufacture about 5,000 new machines and equipment of more than 100 descriptions at the ministry's plants. The output of 19 new units of machinery and 20 means of mechanization for new technological processes is envisaged, including those for the northern regions of Western Siberia and for construction of the Caucasus Transshipment Railroad. Significant increase in operations for further mechanization, automation and robotization of technological processes, especially at industrial enterprises, is next in turn.

A permanent commission has been formed in the ministry which has been charged with developing a five-year plan of industrial production for the series output of new equipment based on the organization and development of a cooperative within the ministry and production specialization. We must convert the industrial production plans of the main administrations and the ministry as a whole into a tool for scientific and technical progress in the sector, reducing in every way possible the output of an obsolete product mix which does not provide for a sharp increase in the efficiency of transport construction. The measures cited provide for such steps.

Improvement in the management system and its organizational structure is an important direction for ensuring scientific and technical progress and an increase in production efficiency.

The scopes of specialization must be expanded significantly. The measures approved provide for the establishment of a number of specialized organizations for the production of line operations and special engineering operations using advanced technologies, and for setting up specialized interregional subunits for building hydraulic engineering structures, and so forth.

The high efficiency and necessity for transport construction of enlarging trusts and subunits has been noted repeatedly. There can be no doubts that the problems of technical progress can be resolved practically only in large trusts and subunits which have opportunities to maneuver resources. Enlargement of construction organizations has been put on the basis of economic incentive. Stable standards are being established for trusts for a wage fund for ITR's [engineering and technical personnel] and employees valued at 1 million rubles of construction and installation work. It has been authorized to utilize the savings created through the enlargement entirely for increasing workers' wages and to make a supplementary payment up to 50 percent of the salary. The main administrations are obliged to organize the application of this incentive everywhere and to monitor its effectiveness.

Positive experience has been accumulated by ministry organizations in the use of computer technology for automating project planning, a number of SAPR [expansion unknown] systems have been set up and are being utilized on the basis of a YeS EVM [unified computer system], and estimates are being made in the process of planning transport projects on the mini-EVM [minicomputer]. But there is one extraordinarily important problem here, at the point where planning a project and managing its construction come together. A significant part of the data necessary for management is contained in planning estimates in such a form that the plan has to be "dug up" repeatedly in order to prepare requisitions for material and technical resources and to put schedules together for the production of operations. For this reason, developers of the systems for automating project planning should ensure that planning estimates are issued in a form convenient for construction workers. Such work also has been stipulated by the ministry's measures. In the coming years we must strive to ensure that specifications, requisition records, estimates and other documents of the project planner are issued only with the aid of a computer. Resolution of this problem will make it possible to take an important step in using computer technology in the planning and management of construction production.

The main objective of measures for problems of improving organizational and economic forms of integrating sectorial science and construction and industrial production is the same--to turn science face to face with production and production face to face with science. The basic task lies in overcoming the dissociation of the different links in the "research-production" chain. This dissociation becomes apparent in everything, in all stages of creating new technology. The main production administrations exerted a weak influence on formulation of scientific research plans previously, and did not demonstrate the proper initiative. Without this, it is impossible to ensure, much as we would like, that sectorial science works on the most vital problems of production.

At present, the procedure for planning scientific developments and creating new technology has been changed.

Now the main administrations give orders based on data from trusts for the development of new technology and bear the responsibility for all stages of its development right up to mass production and its introduction. The problem



lies in ensuring that this procedure is strictly observed, that forms and blanks are not filled in formally, and that responsibility for the technical level of production really triumphs. Every manager and, of course, the chief engineers of the main administrations and trusts first of all, must understand that ensuring the high technical level of production is their basic duty.

The demands upon scientific research and planning institutes are increasing. All institutes and every scientist should be fully aware of their direct responsibility for introducing into production the latest achievements of scientific and technical progress.

An important role in solving the problem of accelerating scientific and technical progress, in increasing labor productivity in the sector, and in reducing manual labor should be played by production innovators--the efficiency experts and inventors. Great hopes rest on them in the matters of economizing resources, improving technology and organizing labor. The army of innovators numbers 34,000 persons. Every year more than 38,000 suggestions aimed at improving the efficiency of transport construction are submitted. More than 93 million rubles are saved annually through the efforts of the efficiency experts and inventors. Involving every member of the labor collective in solving the problems of accelerating scientific and technical progress; explaining the significance of invention and rationalization for a further increase in labor productivity, the economy of materials and fuel and power resources, and an increase in product quality and improvement in working conditions; and more widely disseminating the advanced experience of innovators--this is the important task of our economic managers and party and trade union organizations.

In resolving problems of improving planning, it is necessary for directive organs to be actively included in the development of proposals, which would make it possible to increase the initiative and economic independence of construction organizations and industrial enterprises.

A significant and direct influence on scientific and technical progress and improvement in labor organization is rendered by brigade and collective cost accounting, technically substantiated norm setting, and scientific organization of labor.

Forms of contracting are opening broad opportunities for the development of a creative relationship by workers and engineering and technical personnel toward the work and for the introduction of advanced technology and modern means of mechanization, which in turn exerts a direct influence on an increase in labor productivity and acceleration of projects construction.

In addition, the brigade contract has not been widely applied in many subunits and does not exert a substantial influence on improvement in the technical and economic indicators of trusts' activity. The resources of a contract are being utilized extremely unsatisfactorily in the Kuybyshevtransstroy, Ulyanovsktransstroy, Daltransstroy, Krasnoyarsktransstroy, Armtunneltransstroy, Altaytransstroy, Angarstroy, Yugovostransstroy and Azerbaidzhantransstroy trusts.

The certification of work places acquires great significance under conditions in which the achievements of scientific and technical progress are widely introduced. The main task here lies in bringing work places in production into conformity with advanced technology and the NOT [scientific organization of labor], in equipping them with the latest means of mechanization, in eliminating work places which do not correspond to modern technology, releasing production areas and superfluous manpower resources in the process. It is necessary for main administrations and trusts to attach the most serious and exacting character to this work, because a vast resource for increasing labor productivity is involved in the good equipment of work places, and it must be utilized to the full extent.

At the same time, it is necessary to bear in mind that the most important resource for efficiency is improvement in organization and increased technological and labor discipline--in a word, putting everything in exemplary order at construction sites and enterprises.

The report by Comrade M. S. Gorbachev, general secretary of the CPSU Central Committee, at the June conference in the CPSU Central Committee stressed the necessity for intensified work with personnel in every possible way and systematic analysis and critical assessment of the practical results of their leadership. We must devote particular attention to the identification and advancement to management positions of employees who possess a thorough knowledge of the work and a sense of what is new that relates critically to their own activity.

Transport construction has considerable scientific and technical potential at its disposal for increasing the efficiency of construction production, achieving a significant increase in labor productivity and savings in material and technical resources, and improving the use of production funds, construction quality and the output produced.

More fully utilizing these resources for successful resolution of all the tasks before the Ministry of Transport Construction is a matter of honor for all transport construction workers.

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